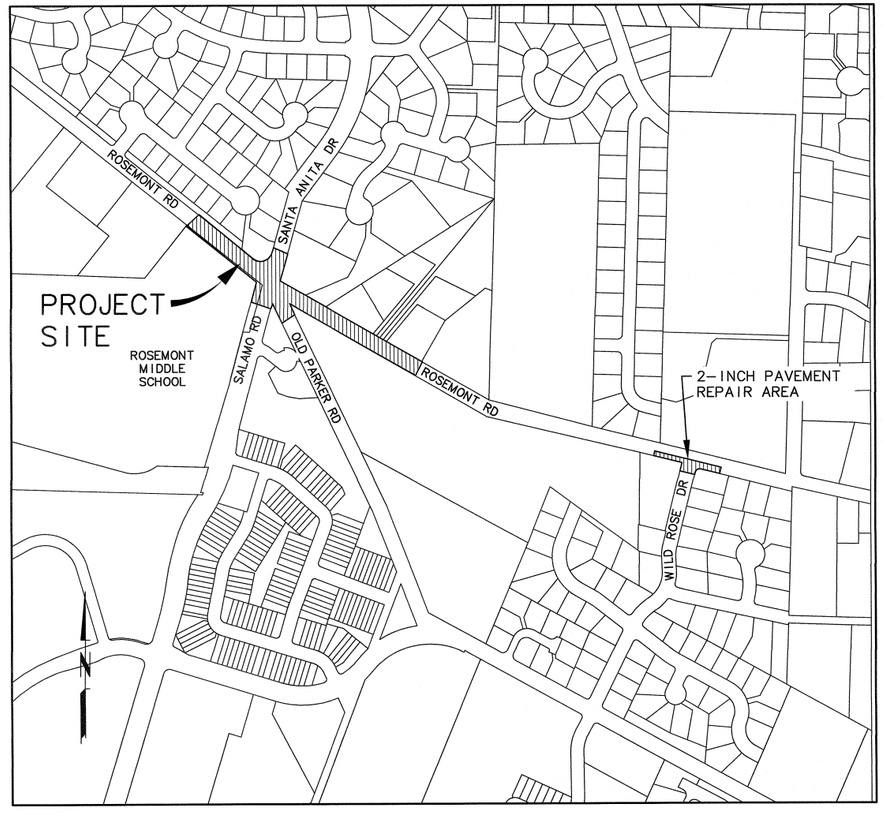
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS
PROJECT NO. PW-13-14

APRIL 2014

INDEX OF DRAWINGS



LOCATION MAP
SCALE: 1"=300'

ATTENTION: OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-246-6699.)

NO. | DATE | REVISION | BY

DESIGNED: AHG
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET G-1
1 OF 26

REGISTERED PROFESSIONAL ENGINEER 76447 OREGON JULY 23, 1974 ANDREW HENRY
RENEWS: 6-30-15

SCALE VERT: AS SHOWN HORIZ: AS SHOWN
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1", THEN DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: COVER SHEET, INDEX OF DRAWINGS, AND LOCATION MAP

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 PHONE 503-225-9010
Portland, Oregon 97204 FAX 503-225-9022

MSA PROJECT: 14-1524.108 DATE: APRIL 2014

GENERAL NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY LOCAL, COUNTY, STATE, AND UTILITY CONSTRUCTION PERMITS, AND SHALL CONTACT EACH PERMITTING AGENCY AT LEAST TWO (2) BUSINESS DAYS PRIOR TO STARTING WORK. CONTRACTOR SHALL OBTAIN ALL REQUIRED LICENSES BEFORE STARTING CONSTRUCTION. CONTRACTOR TO COMPLY WITH CITY PERMITS & REQUIREMENTS FOR WORK IN & RESTORATION OF, ROADWAYS. CONTRACTOR TO SUBMIT TRAFFIC CONTROL PLAN AS REQUIRED FOR APPROVAL.

2. THE LOCATIONS OF ALL EXISTING UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE BASED ON A FIELD SURVEY & INFORMATION SUPPLIED BY UTILITY COMPANIES. LOCATIONS ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS, TYPE & SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING/CONDUITS & SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS NOT SHOWN ON THE PLANS AND THE NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. CONTRACTOR SHALL PROVIDE 72 HOUR NOTICE TO ENGINEER AND THE AFFECTED UTILITY. CONTRACTOR SHALL ARRANGE FOR THE RELOCATION OF ANY UTILITIES IN CONFLICT WITH THE PROPOSED CONSTRUCTION.

3. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF ORS 757.541 TO 757.571. THE CONTRACTOR SHALL NOTIFY EACH UNDERGROUND UTILITY AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS, PRIOR TO EXCAVATING, BORING, OR POTHOLING.

4. POTHOLING AND TRENCH EXCAVATION SHALL SUFFICIENTLY PRECEDE LAYING OF PIPE TO ALLOW REQUIRED ELEVATION AND ALIGNMENT ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ADJUSTMENTS SHALL BE EXPECTED AND CONSIDERED INCIDENTAL.

5. NO ADDITIONAL PAYMENT SHALL BE MADE FOR UTILITY RELOCATION COORDINATION OR DELAYS CAUSED BY UTILITY CONFLICTS. ALL COSTS RELATED TO UTILITY COORDINATION AND RELOCATION, INCLUDING ADDITIONAL POTHOLING, ARE TO BE CONSIDERED INCIDENTAL AND INCLUDED IN THE UNIT PRICES OF BID.

6. UTILITIES OR INTERFERING PORTIONS OF UTILITIES THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL PLUG THE REMAINING EXPOSED ENDS OF ABANDONED UTILITIES, UNLESS OTHERWISE REQUIRED BY THE ENGINEER.

7. ATTENTION: OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-246-6699.)

8. CONTRACTOR SHALL PROTECT ALL PROPERTY CORNERS, SURVEY MONUMENTS AND CONTROL POINTS TO THE EXTENT POSSIBLE.

9. CONTRACTOR SHALL KEEP AND MAINTAIN A CURRENT SET OF DRAWINGS ON SITE. CONTRACTOR TO KEEP ACCURATE "AS-BUILT" RECORD COPY OF PLANS. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL SUBMIT A CLEAN SET OF FIELD RECORD DRAWINGS CONTAINING ALL AS-BUILT INFORMATION FOR USE IN THE PREPARATION OF AS-BUILT DRAWINGS FOR SUBMITTAL TO THE CITY.

10. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL HOMES AND BUSINESSES AT ALL TIMES. PROVIDE WRITTEN NOTICE TO ALL PROPERTY OWNERS AT LEAST TWO (2) BUSINESS DAYS IN ADVANCE OF WORK IN AND/OR CROSSING DRIVEWAYS.

11. CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS BEFORE STARTING CONSTRUCTION, AND 24 HOURS BEFORE RESUMING WORK AFTER SHUTDOWNS EXCEPT FOR NORMAL RESUMPTION OF WORK FOLLOWING SATURDAYS, SUNDAYS, OR HOLIDAYS. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY TESTING OR REQUIRED INSPECTION.

12. ANY ALTERATION OR VARIANCE FROM THESE PLANS, EXCEPT MINOR FIELD ADJUSTMENT NOT AFFECTING DESIGN NEEDED TO MEET EXISTING FIELD CONDITIONS, SHALL FIRST BE APPROVED BY THE ENGINEER. ANY ALTERATIONS OR VARIANCE FROM THESE PLANS SHALL BE DOCUMENTED ON CONSTRUCTION FIELD PRINTS AND TRANSMITTED TO THE ENGINEER. ANY PROPOSED CHANGE IN CONSTRUCTION PLANS MUST BE SUBMITTED IN WRITING AND APPROVED BY ENGINEER PRIOR TO COMMENCING WORK.

13. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED OR REPLACED MATERIAL & EQUIPMENT IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS, EXCEPT THOSE ITEMS DESIGNATED BY THE OWNER FOR SALVAGING. SALVAGED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER, & SHALL BE CAREFULLY REMOVED & STORED AS DIRECTED.

14. CONTRACTOR SHALL RESTORE ALL STRUCTURES, LOTS, SWALES, DITCHES, CURBS, FENCES, WALLS, MAILBOXES, SIGNS, POLES, GUY WIRES, PIPING, & UTILITIES DISTURBED DURING CONSTRUCTION TO EXISTING CONDITIONS UNLESS OTHERWISE SPECIFIED.

15. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY FOR APPROVAL. A COPY OF THE APPROVED TRAFFIC CONTROL PLAN SHALL BE PROVIDED TO THE ENGINEER AND AVAILABLE AT THE WORK SITE. THE CITY RESERVES THE RIGHT TO ADD TO OR MODIFY TRAFFIC CONTROL REQUIREMENTS AS MAY BE NECESSARY TO EFFECTIVELY CONTROL TRAFFIC AND TO ASSURE PUBLIC SAFETY.

16. CONTRACTOR SHALL PROTECT TRAFFIC AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS, TRAFFIC CONES PER CITY REQUIREMENTS IN ACCORDANCE WITH MUTCD (INCLUDING OREGON SUPPLEMENTS). ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY.

17. FOR STREET IMPROVEMENTS, ADJUST ALL MANHOLES, CLEANOUTS AND VALVE BOXES TO FINISH GRADE. FOR MANHOLE RAISES, MANHOLE RINGS SHALL BE GROUTED ON THE INSIDE WITH NON-SHRINK GROUT.

18. TRENCH COMPACTION: TESTS OF TRENCH FILL MATERIALS SHALL BE PER THE ODOT MANUAL OF FIELD TEST PROCEDURES (MFTP) AND MADE ON EACH LIFT OF FILL. TESTS SHALL BE TAKEN AT THE LOCATION AND FREQUENCY ESTABLISHED BY THE ENGINEER.

19. ROADWAY MATERIALS COMPACTION: COMPACT PER THE MFTP. TESTS SHALL BE TAKEN AT THE LOCATION AND FREQUENCY ESTABLISHED BY THE ENGINEER.

20. CONTRACTOR SHALL INSTALL & MAINTAIN EROSION & SEDIMENTATION CONTROL (ESC) MEASURES DURING CONSTRUCTION (ANY TIME OF YEAR) PER THE REQUIREMENTS OF OREGON DEQ, THE CITY AND THE ENGINEER. CERTAIN ESC MEASURES ARE SHOWN ON THE PLANS. CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES AS REQUIRED. CONTRACTOR SHALL SUBMIT ESC PLAN FOR REVIEW.

21. CONTRACTOR SHALL OBSERVE FIELD CONDITIONS, INCLUDING WORK ON PRIVATE PROPERTY, PRIOR TO BIDDING AND ADJUST BID ACCORDINGLY.

22. ALL REFERENCED CITY OF WEST LINN AND ODOT STANDARD DRAWINGS ARE INCLUDED AS PART OF THE CONTRACT DOCUMENTS.

23. CONTRACTOR TO MAINTAIN THE INTEGRITY OF PRIVATELY OWNED AND MAINTAINED DRIVEWAYS. DAMAGED SURFACES SHALL BE REPLACED IN KIND UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SUCH REPAIRS SHALL BE CONSIDERED INCIDENTAL.

24. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, STRAIGHT GRADES SHALL RUN BETWEEN ALL FINISH GRADE ELEVATIONS AND/OR FINISH CONTOUR LINES SHOWN. FINISH PAVEMENT GRADES AT TRANSITION TO EXISTING PAVEMENT SHALL MATCH EXISTING PAVEMENT GRADES OR BE FEATHERED PAST JOINTS WITH EXISTING PAVEMENTS AS REQUIRED TO PROVIDE A SMOOTH, FREE DRAINING SURFACE.

25. DUE TO THE EXISTING CONDITIONS OF ADJACENT STREETS, CUSTOM CONNECTIONS ARE ANTICIPATED TO BE CONSTRUCTED AT THE INTERFACE OF PROPOSED AND EXISTING FEATURES. PROPOSED FEATURES ARE TO BE CONSTRUCTED TO THE EXTENT SHOWN ON THE PLANS.

26. ALL EXISTING FACILITIES SHALL BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SUPPORT, MAINTAIN, OR OTHERWISE PROTECT EXISTING UTILITIES AND OTHER FACILITIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR TO LEAVE EXISTING FACILITIES IN AN EQUAL OR BETTER CONDITION AND TO THE SATISFACTION OF THE ENGINEER.

27. AT THE END OF EACH WORKDAY, ALL TRENCHES AND EXCAVATIONS SHALL BE BACKFILLED AND ALL AREAS WITHIN STREETS SHALL BE TEMPORARILY PAVED OR COVERED TO THE SATISFACTION OF THE ENGINEER. TEMPORARY HARD-SURFACE PATCH (COLD MIX AC OR HOT MIX BASE PAVING) SHALL BE PLACED ON TRENCHES WITHIN ROADWAYS AT THE END OF EACH DAY'S WORK, UNLESS OTHERWISE DIRECTED. NO TRENCH, ON SITE OR OFF-SITE, SHALL BE LEFT AT ANY TIME IN AN UNSAFE CONDITION. CONTRACTOR IS RESPONSIBLE FOR AND IS LIABLE FOR HAZARDS OR DAMAGE RESULTING FROM THE EXECUTION OF THE WORK.

28. OVER-EXCAVATION OF UNSUITABLE MATERIALS AND BACKFILL WITH SUBGRADE STABILIZATION SHALL BE APPROVED BY THE ENGINEER ON AN AS-NEEDED BASIS.

29. SAWCUTTING OF EXISTING SURFACES, WHICH INCLUDES ASPHALTIC CONCRETE AND CONCRETE SURFACES, SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE UNIT PRICES OF THE BID.

30. MINIMAL TRENCH RESURFACING IS ANTICIPATED FOR THIS PROJECT. TEMPORARY SURFACING COSTS SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE UNIT PRICES OF THE BID. PERMANENT TRENCH RESURFACING WILL BE PAID ONLY WHERE RESURFACING IS NOT OTHERWISE REQUIRED.

31. THE CONTRACTOR SHALL DEVELOP AND MAKE ALL DETAIL SURVEYS NECESSARY FOR LAYOUT AND CONSTRUCTION, INCLUDING EXACT COMPONENT LOCATION, WORKING POINTS, LINES AND ELEVATIONS. PRIOR TO CONSTRUCTION, THE FIELD LAYOUT SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ASSUME THAT ALL SURVEY STAKING IS TO BE COMPLETED USING INFORMATION CONTAINED IN THESE PLANS.

32. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO CAREFULLY PRESERVE BENCHMARKS, REFERENCE POINTS AND STAKES, AND IN THE CASE OF DESTRUCTION THEREOF BY THE CONTRACTOR RESULTING FROM ITS NEGLIGENCE, THE CONTRACTOR SHALL BE CHARGED WITH THE EXPENSE AND DAMAGE RESULTING THEREFORE AND SHALL BE RESPONSIBLE FOR ANY MISTAKES THAT MAY BE CAUSED BY THE UNNECESSARY LOSS OR DISTURBANCE OF SUCH BENCHMARKS, REFERENCE POINTS AND STAKES.

33. CONTRACTOR SHALL MATCH EXISTING AND PROPOSED GRADES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

34. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE PLANS, PROJECT SPECIFICATIONS, CITY OF WEST LINN PUBLIC WORKS DESIGN STANDARDS AND STANDARD DRAWINGS.

DRAINAGE NOTES

1. PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO KEEP ALL EXISTING UTILITIES IN SERVICE AND TO PROTECT THEM DURING CONSTRUCTION. CONTRACTOR SHALL PROPERLY DIVERT ALL STORM FLOWS AS NECESSARY TO ACCOMPLISH WORK. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE CONSTRUCTION DOES NOT INCREASE DITCH OR OVERLAND FLOWS OR FLOODING RISKS.

2. ALL NON-METAL STORM DRAIN PIPING SHALL HAVE ELECTRICALLY CONDUCTIVE TRACER WIRE.

3. ALL MANHOLE INVERT ELEVATIONS (IE IN, IE OUT) SHOWN ON PLANS, ARE PROJECTED TO MANHOLE CENTER RATHER THAN MANHOLE FACE.

4. ALL PIPE CONNECTIONS TO MANHOLES, CATCH BASINS AND OTHER STRUCTURES SHALL BE MADE WITH NON-SHRINK GROUT, PVC SAND COLLARS OR KOR-N-SEAL BOOT AS REQUIRED.

5. WHENEVER STORM DRAIN PIPING CROSSES PROPOSED WATERLINES, MAINTAIN A MINIMUM 18-INCH CLEARANCE.

6. IF EXISTING PIPING CONNECTED TO A STRUCTURE IS FOUND TO BE DAMAGED OR PROPOSED PIPING IS LARGER DIAMETER, REMOVE EXISTING PIPING BY CORE DRILLING WALL TO PROPOSED PIPE OUTSIDE DIAMETER PLUS 4-INCHES OR BREAK OUT EXISTING GROUTING, INSTALL PIPE CONNECTION AS SPECIFIED AND SEAL WITH NON-SHRINK GROUT. PIPE CONNECTIONS DAMAGED BY CONTRACTOR NEGLIGENCE DURING CONSTRUCTION SHALL BE REPLACED AT NO COST TO OWNER.

7. WHEN STORM DRAIN PIPING CONNECTIONS ARE LOCATED AT CATCH BASIN CORNER, CATCH BASIN SHALL BE CAST-IN-PLACE OR PRE-CAST CATCH BASIN DESIGNED TO ACCOMMODATE PIPE ENTRANCE AT THE CORNER.

8. WHEN REPLACING MANHOLES, CATCH BASINS, AND PIPE MAINS, ALL EXISTING CONNECTIONS SHALL BE RECONNECTED INCLUDING PIPE MAINS, LATERALS AND SUBGRADE PIPING UNLESS OTHERWISE DIRECTED BY ENGINEER. ALL CONNECTIONS OF EXISTING PIPING SHALL BE ACCOMPLISHED USING APPROVED CONNECTION METHODS & MATERIALS.

9. STORM DRAIN PIPING SHALL BE TV INSPECTED, SEE SPECIFICATIONS.

10. ALL MANHOLES AND CATCH BASINS INSTALLED SHALL HAVE SUFFICIENT CLEARANCE TO PROVIDE ACCESS FOR TV INSPECTION CAMERAS.

11. CONTRACTOR SHALL MATCH SLOPE AND ALIGNMENT OF EXISTING PIPE WHEN CONNECTING TO EXISTING PIPING.

12. COMPLY WITH OAR CHAPTER 333 RULES FOR REQUIRED WATERLINE – SEWERLINE SEPARATION AND CROSSING REQUIREMENTS.

SURVEY NOTES

1. TOPOGRAPHIC MAP WAS COMPLETED BY HDJ DESIGN GROUP, PLLC.

2. THE ELEVATION DATUM FOR THIS SURVEY IS NAVD 88 (CITY OF WEST LINN DOES NOT CURRENTLY HAVE BENCHMARK OR DATUM SYSTEM).
ELEVATION=676.02'
HDJ CONTROL POINT NUMBER: 1
THE BENCHMARK IS A 1/2" IRON ROD WITH RED PLASTIC CAP INSCRIBED "HDJ CONTROL" LOCATED APPROXIMATELY 13 FEET NORTHEAST OF THE END OF SIDEWALK AND APPROXIMATELY 2.2 FEET OFF THE FACE OF CURB OF THE SOUTHEAST CORNER OF THE INTERSECTION OF ROSEMONT ROAD AND SALAMO ROAD.
*BENCHMARK ELEVATIONS WERE TRANSFERRED TO SITE CONTROL POINTS THROUGH STATIC GPS DENSIFICATION AND DIFFERENTIAL LEVELS (NGS CONTROL POINTS SALAMO AND SHEPHERD).

3. THE HORIZONTAL DATUM FOR THIS SURVEY IS NAD 83(2011), STATE PLANE OREGON NORTH (ZONE 3601).

4. THE UNDERGROUND UTILITIES SHOWN HEREON WERE BASED ON UTILITY LOCATE PAINT MARKS SUPPLIED BY THE OREGON UTILITY NOTIFICATION CENTER AS WELL AS SURFACE EVIDENCE AND PRIVATE AS-BUILT RECORDS. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED.

5. THE NORTHEAST PORTION OF THE INTERSECTION (PRIVATE PROPERTY) IS CURRENTLY UNDER CONSTRUCTION AND IS BEING DEVELOPED INTO A FUTURE SUBDIVISION. CHANGES ARE OCCURRING DAILY AND MAY NOT REFLECT THE TOPOGRAPHY DEPICTED ON THIS MAP.

G:\PDX_Projects\14\1524\CAD\Sheets\14-1524-108-OR-G1-G3.dwg G-2 4/16/2014 11:47 AM DAK 18.2s (LMS Tech)

NO.	DATE	REVISION	BY

DESIGNED: AHG
DRAWN: DKT/OAK
CHECKED: GEC
APPROVED: TLB

SHEET G-2
2 OF 26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 29, 1983 AMBROM HENRY GILSY 76447 RENEWS 6-30-15

SCALE VERT: AS SHOWN HORIZ: AS SHOWN
NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: GENERAL NOTES

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

DATE: APRIL 2014

MSA PROJECT: 14-1524.108

LEGEND

	EXISTING	PROPOSED
CABLE TELEVISION	----CATV----	
SANITARY SEWER	----SS----	
STORM DRAIN	----SD----	SD
UTILITY REMOVAL		SD
WATERLINE	----W----	
OVERHEAD POWER	----OVHD----	
UNDERGROUND POWER	----E----	
FIBER OPTIC	----FO----	
GAS	----G----	
TELEPHONE	----T----	
JOINT UTILITY TRENCH		
CULVERT		
RIGHT-OF-WAY/ PROPERTY LINE		
CENTER LINE		
FENCE		
SAW CUT LINE		
EDGE OF ROAD		
STANDARD CURB		
CURB AND GUTTER		
SIDEWALK		
DITCH		
CAP/PLUG		
CLEANOUT		
MANHOLE		
CATCH BASIN/FIELD INLET		
VALVE		
FIRE HYDRANT ASSEMBLY		
WATER METER		
UTILITY POLE		
SIGN		
MAILBOX		
TREE DECIDUOUS		
LIGHT POST		
MAJOR CONTOUR	180	180
MINOR CONTOUR	181	181
GRADE BREAK		
RETAINING WALL		
ADA RAMP		
DRIVEWAY		
SAWCUT		
MULCH OR SEEDING		
RIPRAP		

ABBREVIATIONS

AC	ASPHALTIC CONCRETE
ABAN(D)	ABANDON(ED)
APPROX	APPROXIMATELY
APPVD	APPROVED
ASPH	ASPHALT(IC)
ASSY	ASSEMBLY
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BOTTOM OF CURB
BCR	BEGIN CURB RETURN
BETW	BETWEEN
BFILL	BACKFILL
BLDG	BUILDING
BRK	BREAK
BTM	BOTTOM
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
℄	CENTER LINE
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CI	CAST IRON
CIPP	CAST IN PLACE PIPE
CJ	CONTROL JOINT
CL	CLASS
CLR	CLEARANCE
CND	CONDUIT
CONC	CONCRETE
CONST	CONSTRUCT(ION)
COORD	COORDINATE
COP	COPPER
COWL	CITY OF WEST LINN
CPP	CORRUGATED POLYETHYLENE PIPE
CR	CRUSHED ROCK
CSP	CONCRETE SEWER PIPE
CTL	CENTURY LINK
CY	CUBIC YARD
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DP	DIAMOND PLATE
DWG	DRAWING
DWY	DRIVEWAY
EA	EACH
ECR	END CURB RETURN
EL/ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EXIST/EXTG	EXISTING
FAB	FABRICATE (D)
FIN	FINISH
FO	FIBER OPTIC
FT	FOOT/FEET
G	GAS
GALV	GALVANIZED
GEN	GENERAL
GR	GRADE
GRVL	GRAVEL
HGT	HEIGHT
HPT	HIGH POINT
HWY	HIGHWAY
IE	INVERT ELEVATION
INSTL	INSTALL
JT(S)	JOINT(S)
L	LENGTH
LOC	LOCATION
LF	LINEAR FOOT
℄	LANE LINE
LPT	LOW POINT
LT	LEFT
LVC	LENGTH OF VERTICAL CURVE
MATL(S)	MATERIAL(S)
MAX	MAXIMUM
MB	MAILBOX
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
NWN	NORTHWEST NATURAL GAS
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODOT	OREGON DEPARTMENT OF TRANSPORTATION
OVHD	OVERHEAD POWER LINE
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PERF	PERFORATED
PERP	PERPENDICULAR
PGE	PORTLAND GENERAL ELECTRIC
PL	PROPERTY LINE
PROP	PROPOSED
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL CURVATURE
PVMT	PAVEMENT
PW	PUBLIC WORKS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REINF	REINFORCE(D)(ING)(MENT)
RESTR	RESTRAIN(ED)
REQ'D	REQUIRED
RT	RIGHT
R/W	RIGHT OF WAY
SCHED	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SHT(S)	SHEET(S)
SL	SLOPE
SLV	SLEEVE
SPECS	SPECIFICATIONS
SQ	SQUARE
SRVC	SERVICE
SS	SANITARY SEWER
SSCO	SANITARY SERVICE CLEANOUT
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
STA	STATION
STL	STEEL
STD	STANDARD
S/W	SIDEWALK
T, TEL	TELEPHONE
TC	TOP OF CURB
TEMP	TEMPORARY
THK	THICKNESS
THRD	THREADED
THRU	THROUGH
TYP	TYPICAL
UG	UNDERGROUND
UGP	UNDERGROUND POWER
VARS	VARIES
VERT	VERTICAL(LY)
VC	VERTICAL CURVE
W	WATER
W/	WITH
W/IN	WITHIN
W/O	WITHOUT
WSVC	WATER SERVICE

NO. | DATE | REVISION | BY

DESIGNED: AHC
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET G-3
3 OF 26

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 29, 1987 — ANDREW MERRILL HENRY — 76447
RENEWS: 6-30-15

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
TOPOGRAPHIC LEGEND AND ABBREVIATIONS

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

DATE: APRIL 2014

MSA PROJECT: 14-1524.108

G:\PDX_Projects\14\1524\CAD\Sheets\14-1524-108-OR-G1-G3.dwg G-3 4/16/2014 11:47 AM DAK 18.2s (LMS Tech)

CURB RETURN DATA

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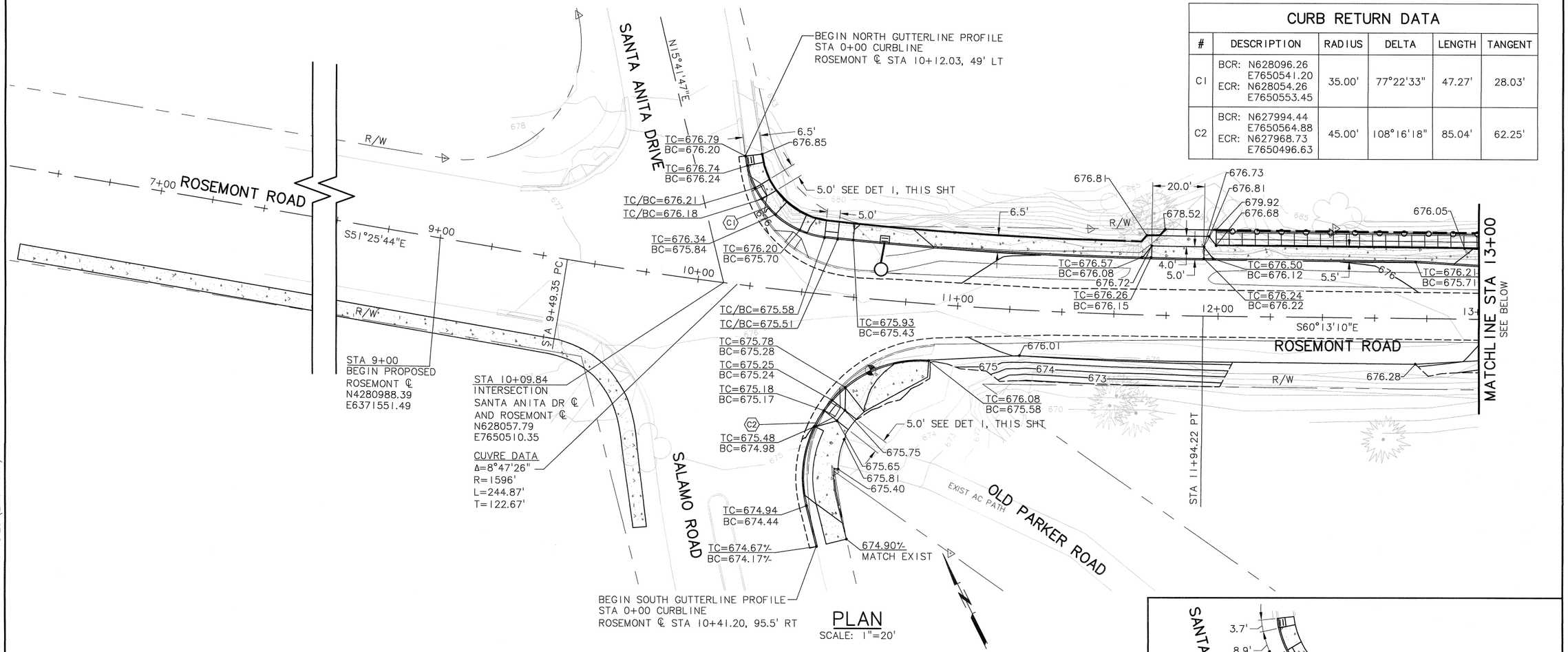

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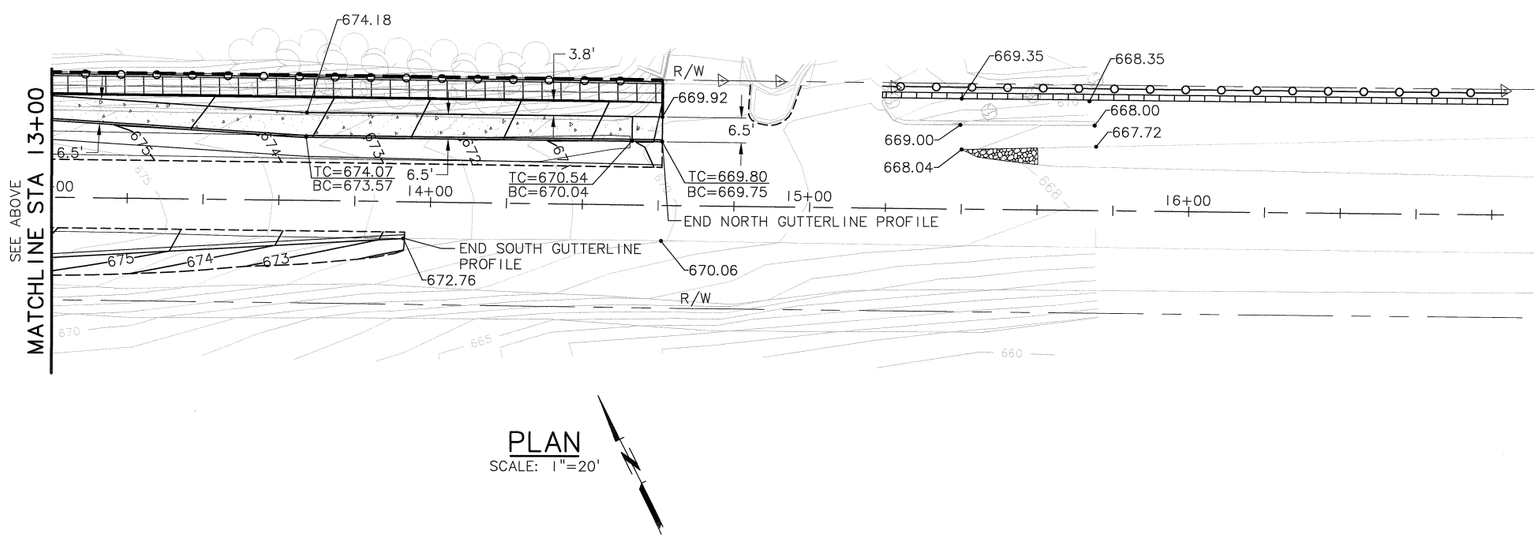
SCALE: 1"=20'



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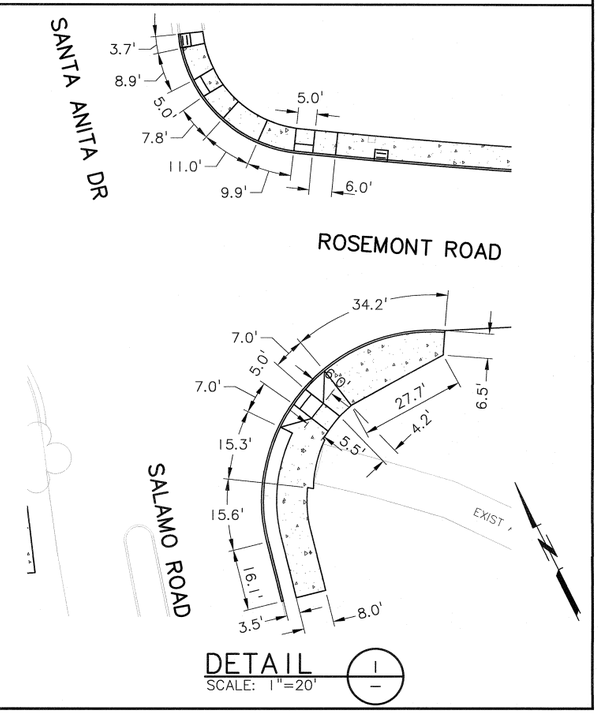


DETAIL 1
SCALE: 1"=20'

NO.	DATE	REVISION	BY

DESIGNED: AHC/RER
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 2, 1987 — ANDREW HENRY BISSEY — 76847 — RENEWS 6-30-15

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

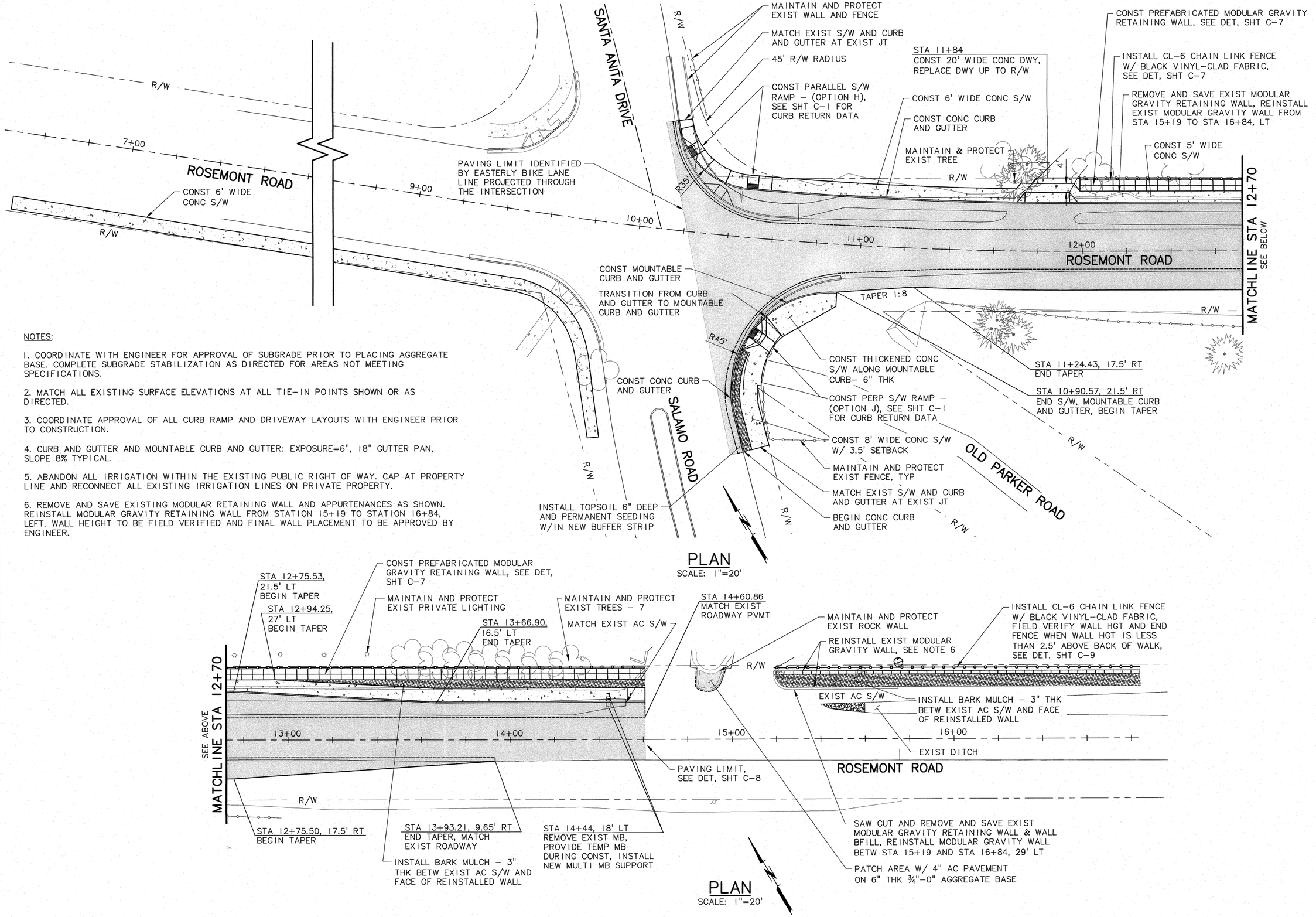
SHEET TITLE:
ALIGNMENT AND GRADING PLAN

SHEET C-1
4 OF 26

MSA
Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-0022

DATE: APRIL 2014
MSA PROJECT: 14-1524.108

G:\PDX_Projects\14\1524\CAD\Sheets\14-1524-108-OR-C-1.dwg C-1 4/16/2014 11:36 AM DAK 18.2s (LMS Tech)



NOTES:

1. COORDINATE WITH ENGINEER FOR APPROVAL OF SUBGRADE PRIOR TO PLACING AGGREGATE BASE. COMPLETE SUBGRADE STABILIZATION AS DIRECTED FOR AREAS NOT MEETING SPECIFICATIONS.

2. MATCH ALL EXISTING SURFACE ELEVATIONS AT ALL TIE–IN POINTS SHOWN OR AS DIRECTED.

3. COORDINATE APPROVAL OF ALL CURB RAMP AND DRIVEWAY LAYOUTS WITH ENGINEER PRIOR TO CONSTRUCTION.

4. CURB AND GUTTER AND MOUNTABLE CURB AND GUTTER: EXPOSURE=6", 18" GUTTER PAN, SLOPE 8% TYPICAL.

5. ABANDON ALL IRRIGATION WITHIN THE EXISTING PUBLIC RIGHT OF WAY. CAP AT PROPERTY LINE AND RECONNECT ALL EXISTING IRRIGATION LINES ON PRIVATE PROPERTY.

6. REMOVE AND SAVE EXISTING MODULAR RETAINING WALL AND APPURTENANCES AS SHOWN. REINSTALL MODULAR GRAVITY RETAINING WALL FROM STATION 15+19 TO STATION 16+84, LEFT. WALL HEIGHT TO BE FIELD VERIFIED AND FINAL WALL PLACEMENT TO BE APPROVED BY ENGINEER.

NO.	DATE	REVISION	BY

DESIGNED: AHG/RER
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET C–2
5 OF 26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 9, 2002 ANDREW HENRY 70447
RENEWS 6–30–15

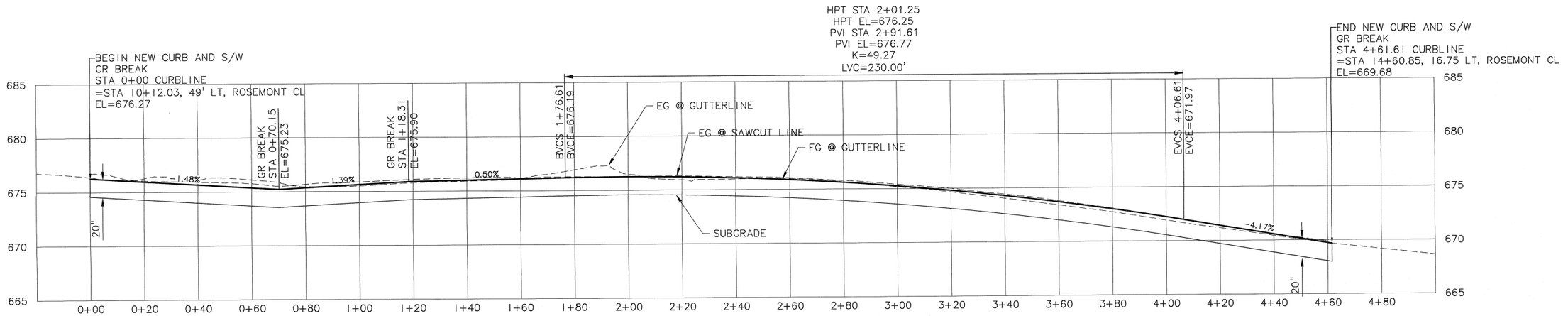
SCALE: VERT: AS SHOWN HORIZ: AS SHOWN
NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0 – 1)

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: STREET IMPROVEMENTS PLAN

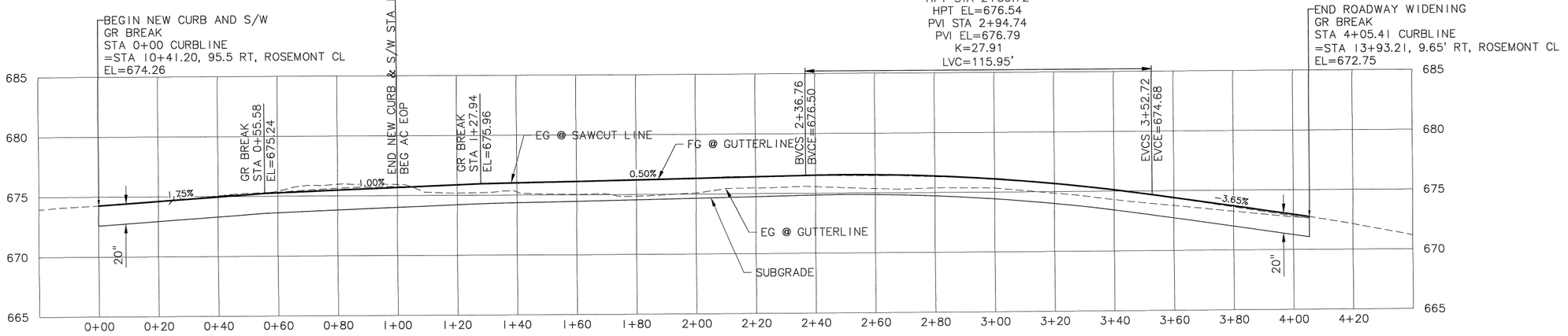
Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE 503–225–9010
FAX 503–225–9022

MSA PROJECT: 14–1524.108
DATE: APRIL 2014



NORTH GUTTERLINE PROFILE – NORTH SIDE ROSEMONT RD

SCALE: 1"=20' HORIZ, 1"=5' VERT



SOUTH GUTTERLINE PROFILE – SOUTH SIDE ROSEMONT RD

SCALE: 1"=20' HORIZ, 1"=5' VERT

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NO.	DATE	REVISION	BY

DESIGNED: AHG/RER
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET C-3 6 OF 26

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 27, 1993 — ANDREW HENRY 76447 — RENEWS 6-30-15

SCALE: VERT: AS SHOWN, HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0 — 1)

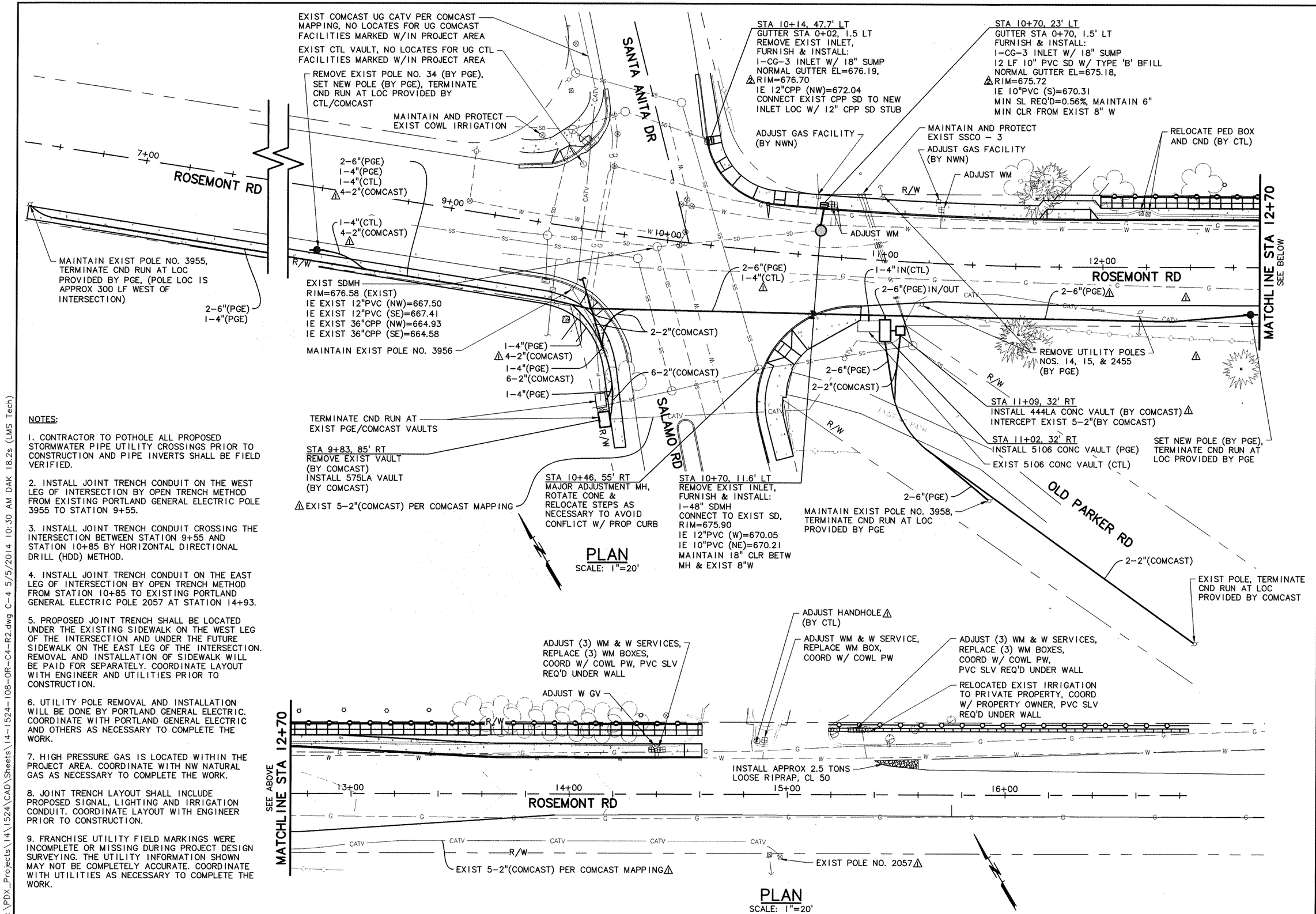
PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE: STREET IMPROVEMENTS
PROFILES

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

MSA PROJECT: 14-1524.108

DATE: APRIL 2014



NOTES:

1. CONTRACTOR TO POTHOLE ALL PROPOSED STORMWATER PIPE UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND PIPE INVERTS SHALL BE FIELD VERIFIED.

2. INSTALL JOINT TRENCH CONDUIT ON THE WEST LEG OF INTERSECTION BY OPEN TRENCH METHOD FROM EXISTING PORTLAND GENERAL ELECTRIC POLE 3955 TO STATION 9+55.

3. INSTALL JOINT TRENCH CONDUIT CROSSING THE INTERSECTION BETWEEN STATION 9+55 AND STATION 10+85 BY HORIZONTAL DIRECTIONAL DRILL (HDD) METHOD.

4. INSTALL JOINT TRENCH CONDUIT ON THE EAST LEG OF INTERSECTION BY OPEN TRENCH METHOD FROM STATION 10+85 TO EXISTING PORTLAND GENERAL ELECTRIC POLE 2057 AT STATION 14+93.

5. PROPOSED JOINT TRENCH SHALL BE LOCATED UNDER THE EXISTING SIDEWALK ON THE WEST LEG OF THE INTERSECTION AND UNDER THE FUTURE SIDEWALK ON THE EAST LEG OF THE INTERSECTION. REMOVAL AND INSTALLATION OF SIDEWALK WILL BE PAID FOR SEPARATELY. COORDINATE LAYOUT WITH ENGINEER AND UTILITIES PRIOR TO CONSTRUCTION.

6. UTILITY POLE REMOVAL AND INSTALLATION WILL BE DONE BY PORTLAND GENERAL ELECTRIC. COORDINATE WITH PORTLAND GENERAL ELECTRIC AND OTHERS AS NECESSARY TO COMPLETE THE WORK.

7. HIGH PRESSURE GAS IS LOCATED WITHIN THE PROJECT AREA. COORDINATE WITH NW NATURAL GAS AS NECESSARY TO COMPLETE THE WORK.

8. JOINT TRENCH LAYOUT SHALL INCLUDE PROPOSED SIGNAL, LIGHTING AND IRRIGATION CONDUIT. COORDINATE LAYOUT WITH ENGINEER PRIOR TO CONSTRUCTION.

9. FRANCHISE UTILITY FIELD MARKINGS WERE INCOMPLETE OR MISSING DURING PROJECT DESIGN SURVEYING. THE UTILITY INFORMATION SHOWN MAY NOT BE COMPLETELY ACCURATE. COORDINATE WITH UTILITIES AS NECESSARY TO COMPLETE THE WORK.

NO.	DATE	REVISION	BY
1	05/05/14	ADD 1 - COMCAST REVISIONS	AHG
2	05/06/14	ADD 1 - RIM ELEV REVISIONS	AHG

DESIGNED: AHG
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 9, 2002 — ANDREW HENRY — 78447 — RENEWS: 6-30-15

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0 — 1)

SHEET C-4
7 OF 26

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
DRAINAGE AND UTILITIES PLAN

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

MSA PROJECT: 14-1524.10B

DATE: APRIL 2014

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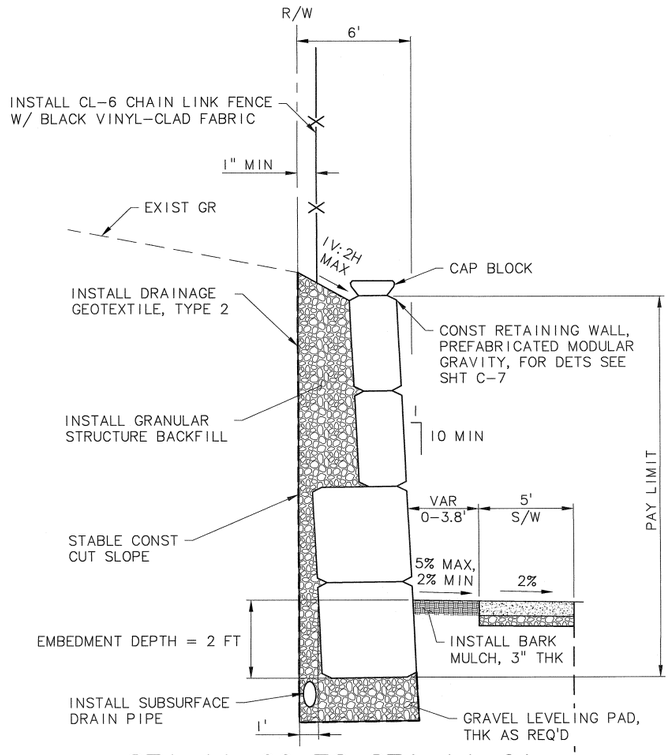
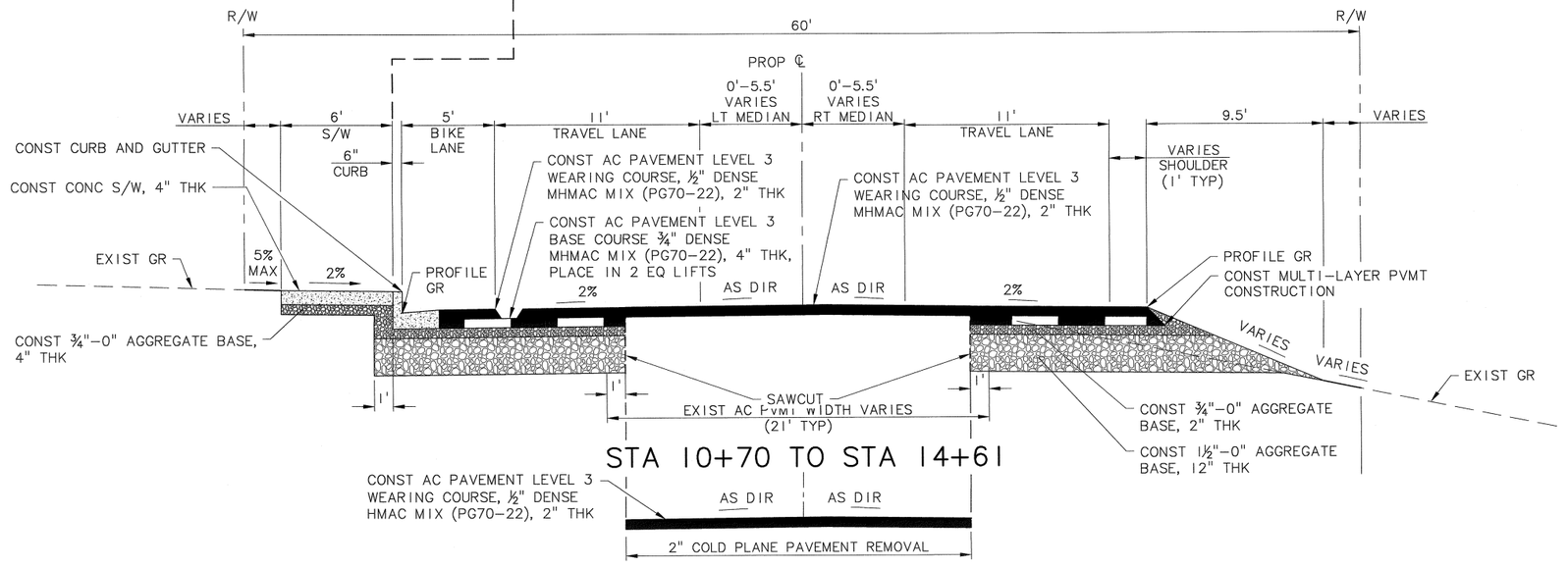


STA 11+99 TO STA 14+61

NOTES:

1. FOR ASPHALT CONCRETE OVERLAY TRANSITIONS AT STATION 10+70 AND STATION 14+61, SEE DETAILS ON SHEET C-8.



STA 10+70 TO STA 14+61

STA 10+22 TO STA 10+70

SW ROSEMONT ROAD – SECTION 1/–

SCALE: NTS

REVISION | BY | NO. | DATE

DESIGNED: AHC/RER
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET C-5 8 OF 26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 9, 1987 ANDREW HENRY 76447 RENEWS 6-30-15

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

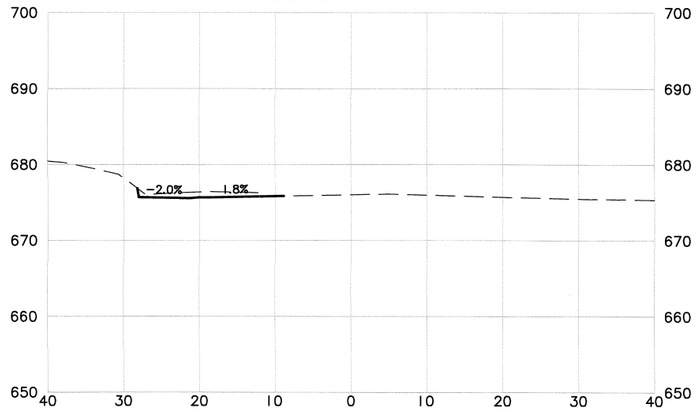
PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: TYPICAL SECTIONS

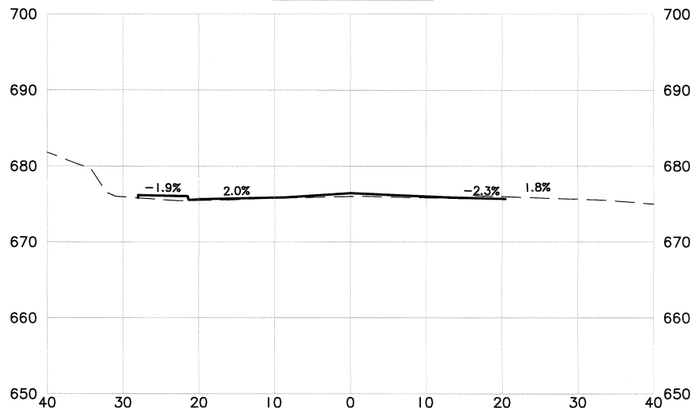
Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 14-1524.108 DATE: APRIL 2014

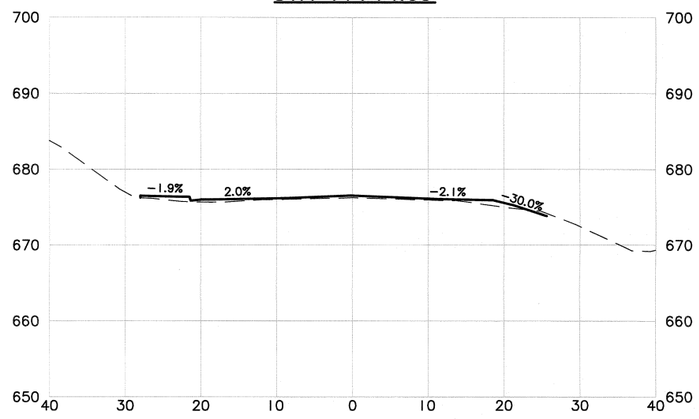
STA 10+47.43



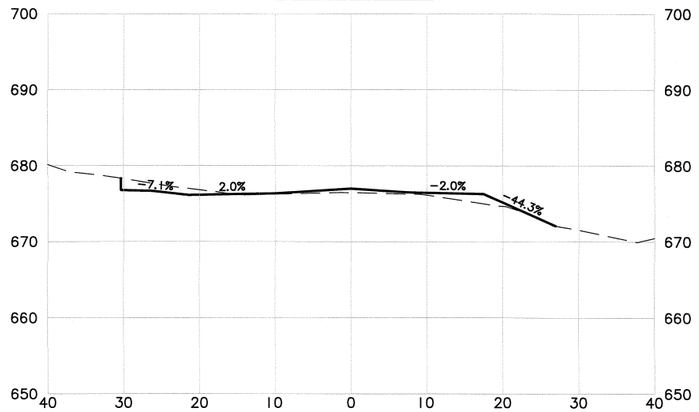
STA 10+90.57



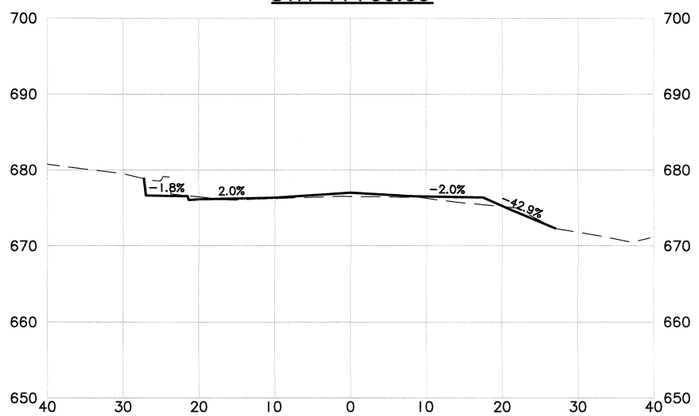
STA 11+14.69



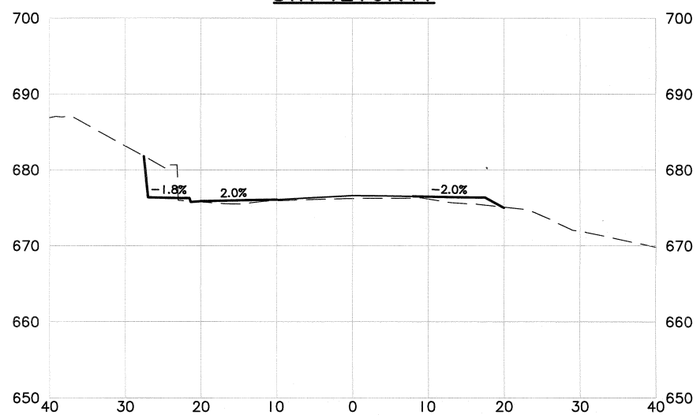
STA 11+84.14



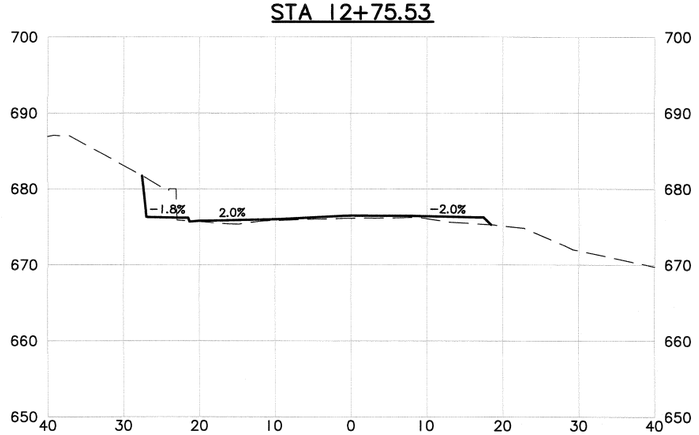
STA 11+99.00



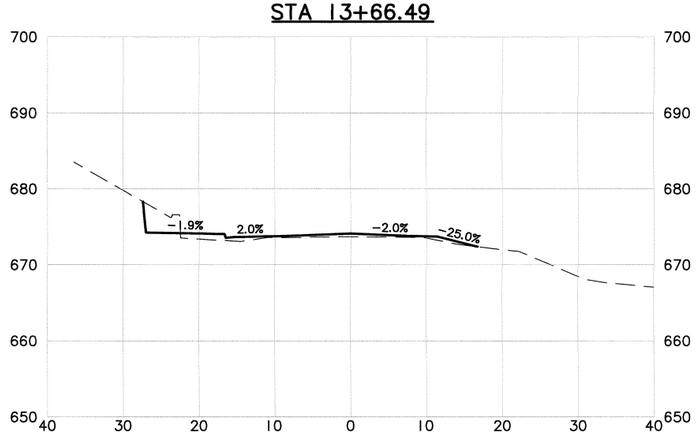
STA 12+67.44



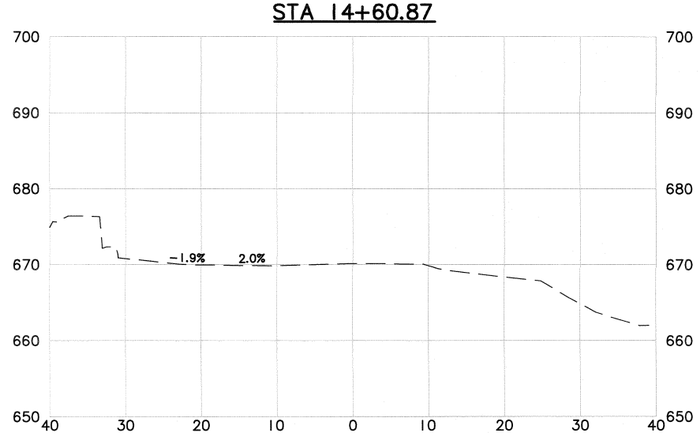
STA 12+75.53



STA 13+66.49



STA 14+60.87



SCALE: 1"=10' HORIZ & VERT

NO.	DATE	REVISION	BY

DESIGNED: AHG/RER
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET C-6
9 OF 26

REGISTERED PROFESSIONAL ENGINEER 78447 OREGON JULY 25, 1997 ANDREW HENRY
RENEWS 6-30-15

SCALE VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE:
CIVIL DETAILS - CROSS SECTIONS

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 14-1524.108
DATE: APRIL 2014

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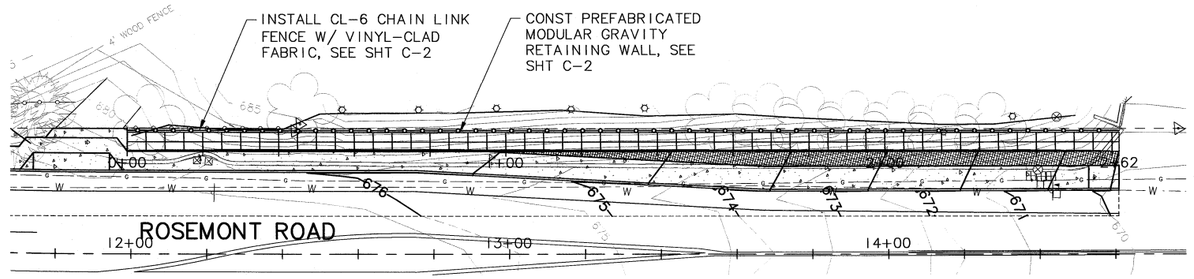
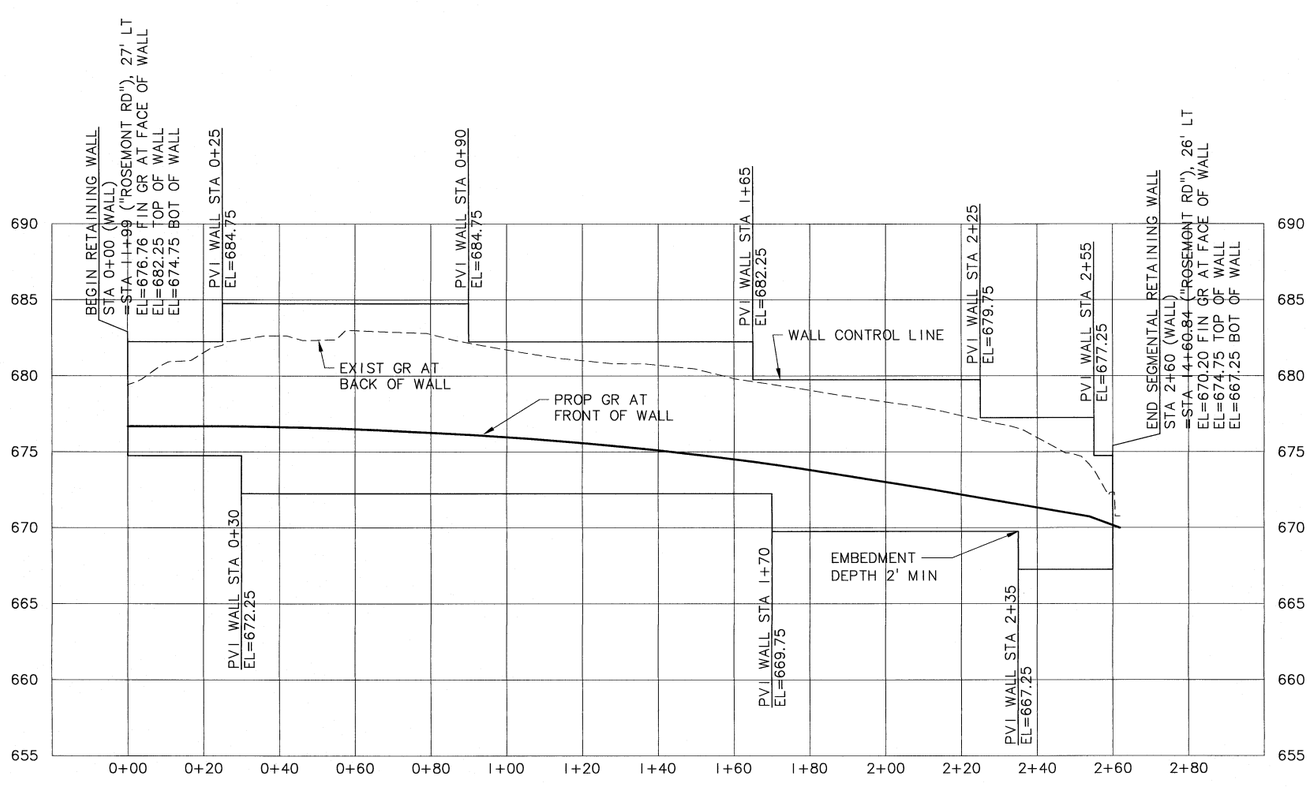
NOTES:

1. ABANDON ALL IRRIGATION WITHIN THE EXISTING PUBLIC RIGHT OF WAY. CAP AT PROPERTY LINE AND RECONNECT ALL EXISTING IRRIGATION LINES ON PRIVATE PROPERTY.

2. INSTALL PROPOSED CHAIN LINK FENCE ONE FOOT FROM THE RIGHT-OF-WAY LINE.



PLAN
SCALE: 1"=20'



RETAINING WALL PROFILE – NORTH SIDE ROSEMONT RD
SCALE: 1"=20' HORIZ, 1"=5' VERT

NO.	DATE	REVISION	BY

DESIGNED: AHG/RER
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET C-7
10 OF 26

REGISTERED PROFESSIONAL ENGINEER 76447 OREGON JUNE 2, 2011 ANDREW HENRY
RENEWS 6-30-15

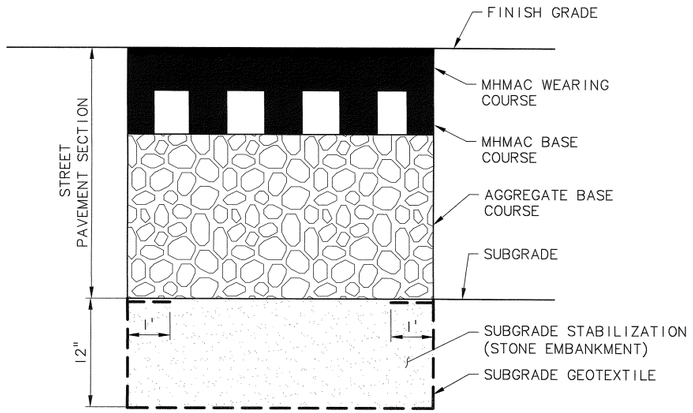
SCALE VERT: AS SHOWN HORIZ: AS SHOWN
NOTICE 0 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
CIVIL DETAILS - RETAINING WALL

MSA Murray, Smith & Associates, Inc. Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 14-1524.108
DATE: APRIL 2014



NOTES:

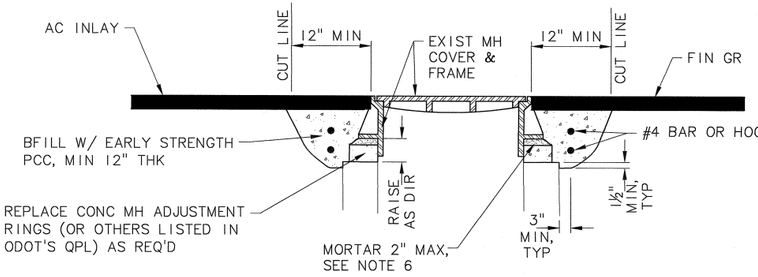
1. SUBGRADE STABILIZATION AREAS TO BE COMPLETED AS DIRECTED BY THE ENGINEER.

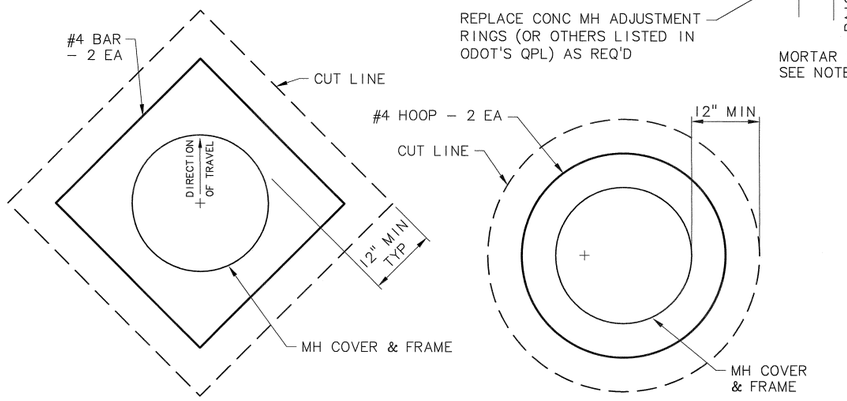
2. FOR PAVEMENT SECTION DEPTHS, SEE TYPICAL SECTIONS.

12" SUBGRADE STABILIZATION

SCALE: NTS

1 / –





NOTES:

1. ROTATE CONE AND RELOCATE STEPS TO AVOID CONFLICT WITH PROPOSED CURB.

2. BACKFILL WITH EARLY STRENGTH PORTLAND CEMENT CONCRETE. ALL CONCRETE SHALL BE COMMERCIAL GRADE CONCRETE.

3. PROTECT FROM TRAFFIC LOADING UNTIL CONCRETE HAS CURED TO 3600 PSI.

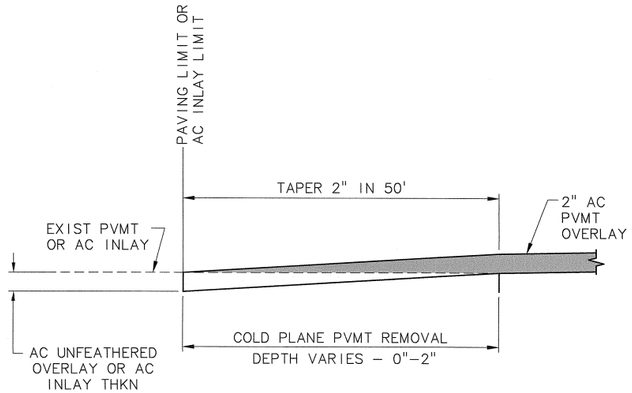
4. SEE APPROPRIATE MANHOLE STANDARD DRAWINGS FOR DETAILS NOT SHOWN.

5. USE EPOXY FOR SYNTHETIC GRADE RINGS.

MAJOR MANHOLE ADJUSTMENT

SCALE: NTS

2 / –



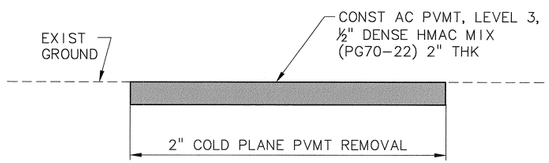
NOTES:

1. TRANSITIONS LOCATED AT STA 10+70 AND AT STA 14+61.

AC OVERLAY TRANSITION DETAIL

SCALE: NTS

3 / –



NOTES:

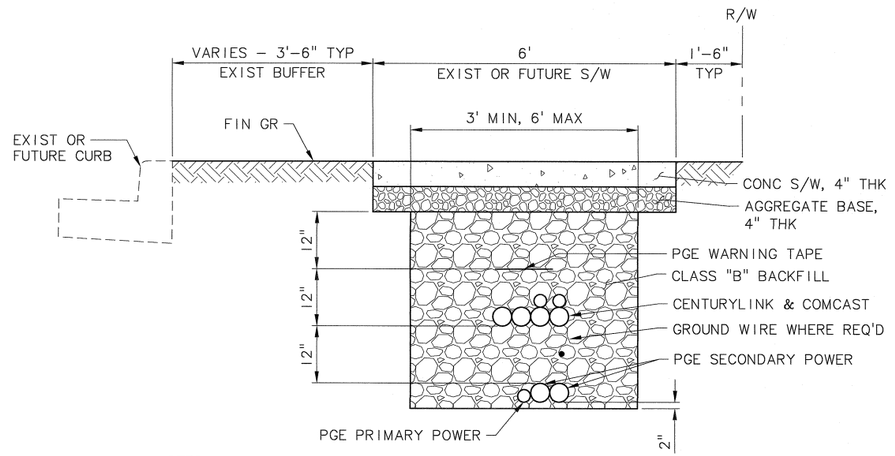
1. PAVEMENT REPAIR AREA IS LOCATED IN THE EASTBOUND LANE OF ROSEMONT ROAD AT WILD ROSE DRIVE (ESTIMATED AREA=730 SQUARE YARDS.

2. FINAL AREA TO BE LOCATED BY ENGINEER PRIOR TO CONSTRUCTION.

2–INCH AC PAVEMENT REPAIR

SCALE: NTS

4 / –



NOTES:

1. THIS DETAIL IS FOR CONDUIT LOCATION ONLY. SEE ODOT STANDARD DWG RD300 FOR BACKFILL DETAILS. PLACE 2" SAND LAYER ABOVE AND BELOW PVC CONDUIT.

2. REMOVE EXISTING SIDEWALK AND AGGREGATE BASE MATERIAL AND INSTALL NEW SIDEWALK PER ODOT STANDARD DRAWING RD700 AND DETAIL ABOVE.

3. REMOVE SUBSURFACINGS, NEW SIDEWALK AND AGGREGATE BASE WILL BE PAID FOR SEPARATELY.

JOINT TRENCH & CONDUIT INSTALLATION

SCALE: NTS

5 / –

NO.	DATE	REVISION	BY

SHEET C–8, 11 OF 26

DESIGNED: AHC
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 2, 1987 — ANDREW HENRY GIVEY — 76447 — RENEWS: 6–30–15

SCALE: VERT: AS SHOWN, HORIZ: AS SHOWN

NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0 – 1")

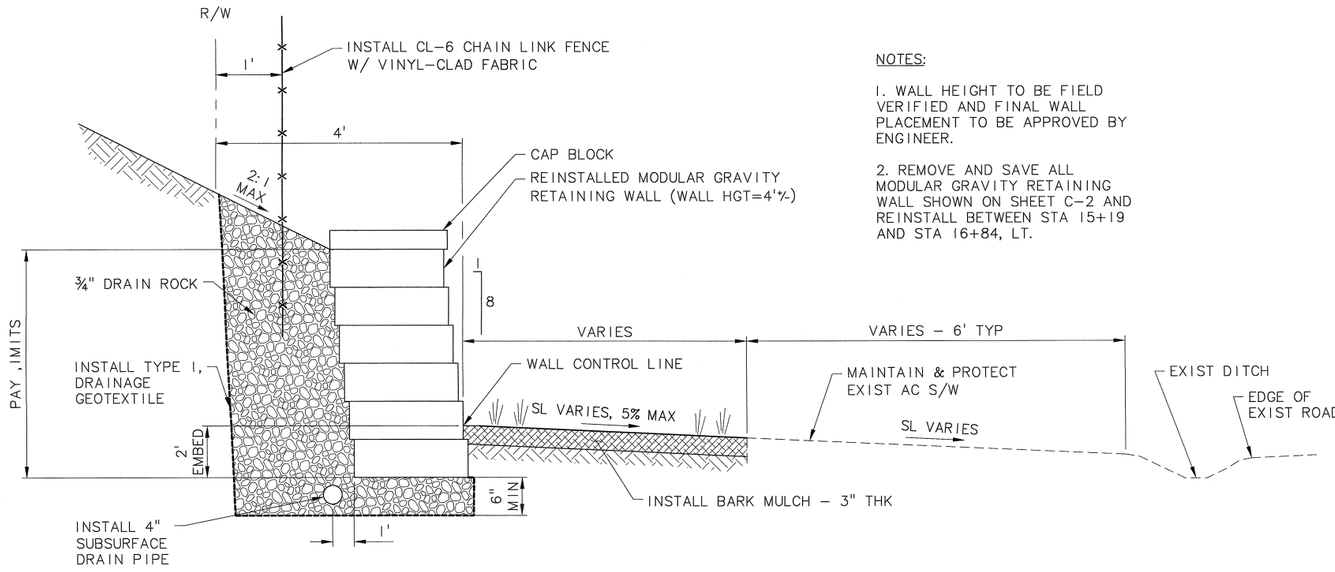
PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: CIVIL DETAILS – MISCELLANEOUS

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900
Portland, Oregon 97204
PHONE 503–225–9010
FAX 503–225–9022

MSA PROJECT: 14–1524.108

DATE: APRIL 2014



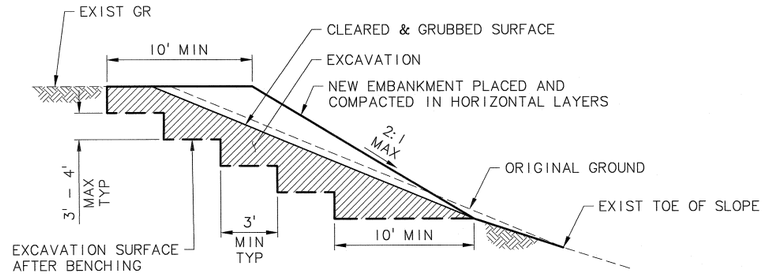
NOTES:

1. WALL HEIGHT TO BE FIELD VERIFIED AND FINAL WALL PLACEMENT TO BE APPROVED BY ENGINEER.

2. REMOVE AND SAVE ALL MODULAR GRAVITY RETAINING WALL SHOWN ON SHEET C-2 AND REINSTALL BETWEEN STA 15+19 AND STA 16+84, LT.

RE-INSTALLED MODULAR GRAVITY RETAINING WALL (1)

SCALE: NTS



NOTES:

1. CONSTRUCT BENCHES ON SLOPES STEEPER THAN 1V:5H TO PROVIDE POSITIVE BOND WITH EXISTING GROUND.

2. BENCHING WORK IS INCIDENTAL TO EMBANKMENT CONSTRUCTION.

SLIVER FILL BENCHING (2)

SCCALE: NTS

NO.	DATE	REVISION	BY

DESIGNED: AHC
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET C-9
12 OF 26

REGISTERED PROFESSIONAL ENGINEER 76447 OREGON JULY 23, 1970 ANDREW HENRY GILES
RENEWS 6-30-15

SCALE VERT: AS SHOWN HORIZ: AS SHOWN
NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1"

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
CIVIL DETAILS - MISCELLANEOUS

MSA Murray, Smith & Associates, Inc. Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 14-1524.108 DATE: APRIL 2014

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NOTES:

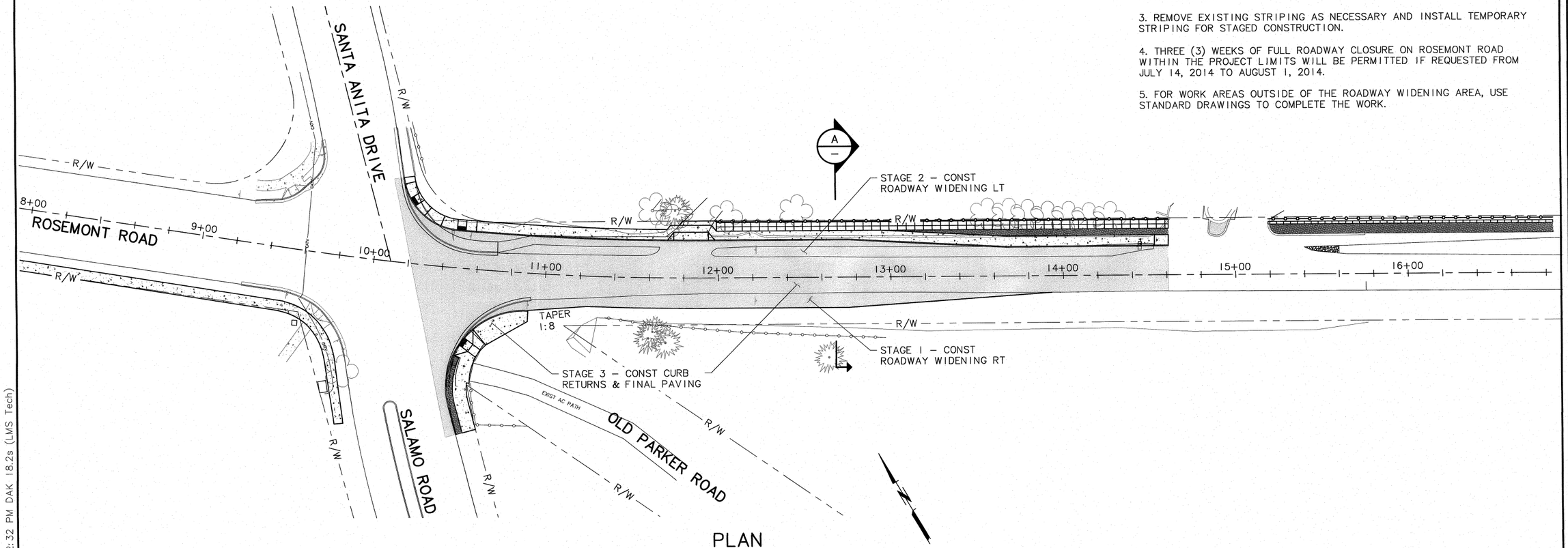
1. SEE OREGON DEPARTMENT OF TRANSPORTATION/AMERICAN PUBLIC WORKS ASSOCIATION STANDARD DRAWINGS TM800, TM810, TM820, TM821, TM841, TM842, TM843, TM844, TM850.

2. SUBMIT TRAFFIC CONTROL PLAN FOR APPROVAL PRIOR TO CONSTRUCTION.

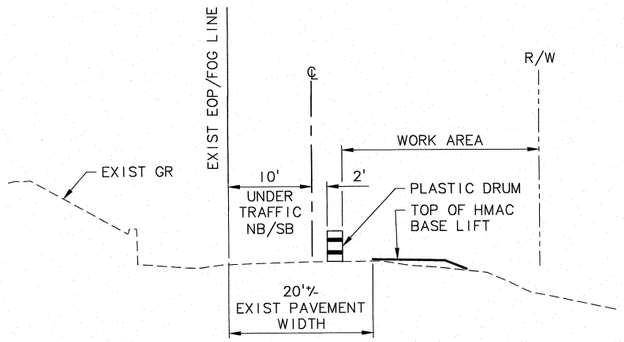
3. REMOVE EXISTING STRIPING AS NECESSARY AND INSTALL TEMPORARY STRIPING FOR STAGED CONSTRUCTION.

4. THREE (3) WEEKS OF FULL ROADWAY CLOSURE ON ROSEMONT ROAD WITHIN THE PROJECT LIMITS WILL BE PERMITTED IF REQUESTED FROM JULY 14, 2014 TO AUGUST 1, 2014.

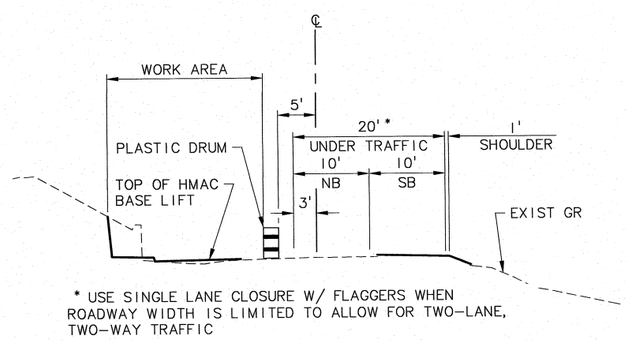
5. FOR WORK AREAS OUTSIDE OF THE ROADWAY WIDENING AREA, USE STANDARD DRAWINGS TO COMPLETE THE WORK.



PLAN
SCALE: 1"=30'

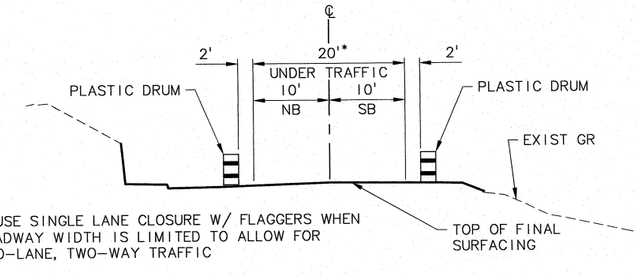


STAGE 1 – WIDENING RIGHT
SCALE: 1"=10' HORIZ, 1"=2' VERT



* USE SINGLE LANE CLOSURE W/ FLAGGERS WHEN ROADWAY WIDTH IS LIMITED TO ALLOW FOR TWO-LANE, TWO-WAY TRAFFIC

STAGE 2 – WIDENING LEFT
SCALE: 1"=10' HORIZ, 1"=2' VERT



* USE SINGLE LANE CLOSURE W/ FLAGGERS WHEN ROADWAY WIDTH IS LIMITED TO ALLOW FOR TWO-LANE, TWO-WAY TRAFFIC

STAGE 3 – CURB RETURNS & FINAL PAVING
SCALE: 1"=10' HORIZ, 1"=2' VERT

NO.	DATE	REVISION	BY

DESIGNED: AHG
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET TC-1
13 OF 26

REGISTERED PROFESSIONAL ENGINEER
OREGON
JUNE 27, 1997
ANDREW HENRY GILSEY
76447
RENEWS 8-30-15

SCALE
VERT: AS SHOWN
HORIZ: AS SHOWN
NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

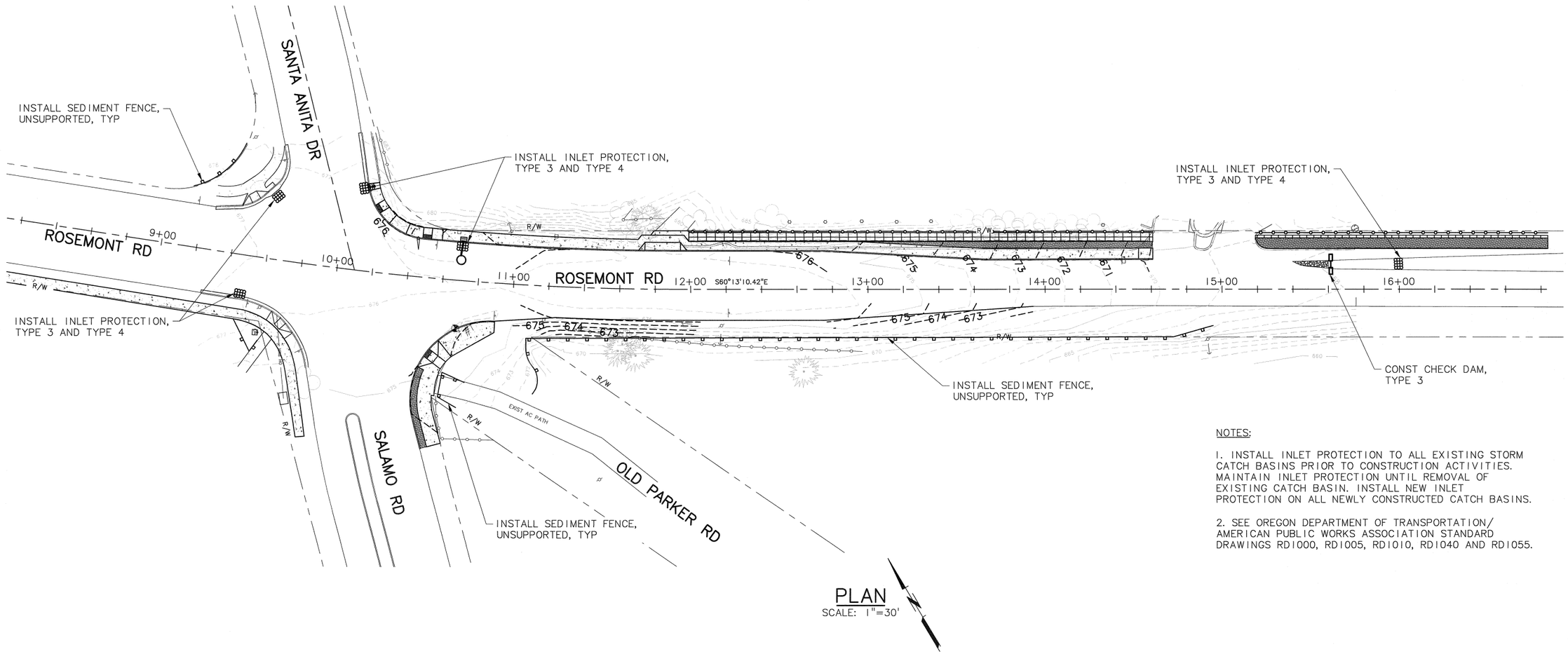
PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
TRAFFIC CONTROL STAGING PLAN

MSA
Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010
FAX 503-225-9022

MSA PROJECT: 14-1524.108
DATE: APRIL 2014

G:\PDX_Projects\14\1524\CAD\Sheets\14-1524-108-OR-TC.dwg TC-1 4/16/2014 2:32 PM DAK 18.2s (LMS Tech)



PLAN
SCALE: 1"=30'

NOTES:

1. INSTALL INLET PROTECTION TO ALL EXISTING STORM CATCH BASINS PRIOR TO CONSTRUCTION ACTIVITIES. MAINTAIN INLET PROTECTION UNTIL REMOVAL OF EXISTING CATCH BASIN. INSTALL NEW INLET PROTECTION ON ALL NEWLY CONSTRUCTED CATCH BASINS.

2. SEE OREGON DEPARTMENT OF TRANSPORTATION/ AMERICAN PUBLIC WORKS ASSOCIATION STANDARD DRAWINGS RD1000, RD1005, RD1010, RD1040 AND RD1055.

NO.	DATE	REVISION	BY

DESIGNED: AHG
DRAWN: DKT/DAK
CHECKED: GEC
APPROVED: TLB

SHEET EC-1 14 OF 26

REGISTERED PROFESSIONAL ENGINEER 76847 OREGON JULY 27, 1979 ANDREW HENRY GILSY
RENEWS 6-30-15

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN

NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
EROSION CONTROL PLAN

MSA
Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 14-1524.108 | DATE: APRIL 2014

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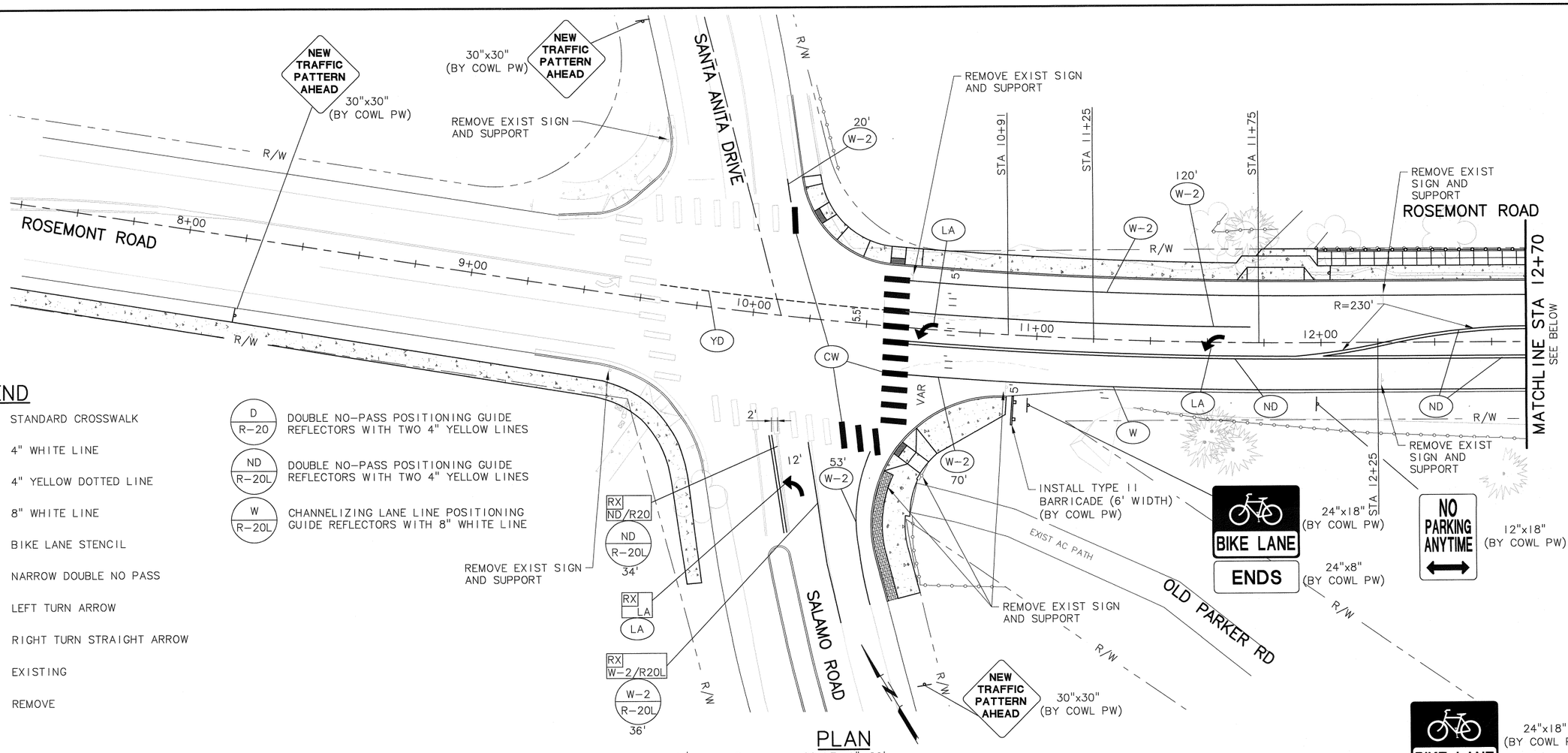

LEGEND

CW	STANDARD CROSSWALK
W	4" WHITE LINE
YD	4" YELLOW DOTTED LINE
W-2	8" WHITE LINE
BS	BIKE LANE STENCIL
ND	NARROW DOUBLE NO PASS
LA	LEFT TURN ARROW
RSA	RIGHT TURN STRAIGHT ARROW
EX	EXISTING
RX	REMOVE

D / R-20	DOUBLE NO-PASS POSITIONING GUIDE REFLECTORS WITH TWO 4" YELLOW LINES
ND / R-20L	DOUBLE NO-PASS POSITIONING GUIDE REFLECTORS WITH TWO 4" YELLOW LINES
W / R-20L	CHANNELIZING LANE LINE POSITIONING GUIDE REFLECTORS WITH 8" WHITE LINE

NOTES:

1. SEE OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD DRAWINGS TM500 THROUGH TM503 FOR PAVEMENT MARKING DETAIL BLOCKS.

2. FOR LEFT TURN STRIPING LAYOUT DETAILS NOT SHOWN, SEE ODOT TRAFFIC LINE MANUAL, 2011.

3. REMOVE EXISTING STRIPING ON SALAMO ROAD AS SHOWN. STRIPING REMOVAL SHALL BE DONE WITH SHOT BLASTING (GRINDING NOT ALLOWED) AND PER SECTION 00851 OF THE OREGON STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

4. ALL LONGITUDINAL PAVEMENT MARKING MATERIAL SHALL BE "THERMOPLASTIC, EXTRUDED, SURFACE, NON-PROFILED" AND INSTALLED PER SECTIONS 00850 AND 00865 OF THE OREGON STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

5. ALL ARROWS SHALL BE TYPE B MATERIAL, AND BAR AND BIKE LANE STENCIL MATERIAL SHALL BE TYPE B-HS PREFORMED FUSED THERMOPLASTIC FILM AND INSTALLED PER SECTIONS 00865 AND 00867 OF THE OREGON STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

6. ALL PAVEMENT MARKINGS SHALL BE FROM THE ODOT QUALIFIED PRODUCTS LIST.

7. REMOVE ALL SIGNS SHOWN. CITY OF WEST LINN WILL INSTALL ALL GROUND MOUNTED SIGNS. RETURN SIGNS TO CITY OF WEST LINN (JEFF RANDAL, 503-880-9194).

8. SIGN LOCATIONS ARE APPROXIMATE. FIELD VERIFY LOCATIONS PRIOR TO INSTALLATION.

9. MAST ARM SIGNAGE TO BE INCLUDED AS PART OF THE SIGNAL POLE AND MAST ARM INSTALLATION.

NO. | DATE | REVISION | BY

DESIGNED: AHC/ANB
DRAWN: DKT/DAK
CHECKED: GLC
APPROVED: TLB

SHEET S-1
15 OF 26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 25, 1997 ANDREW M. HENRY 78447
RENEWS 6-30-15

SCALE: VERT: AS SHOWN HORIZ: AS SHOWN
NOTICE: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE (0 — 1)

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: STRIPING & SIGNAGE PLAN

Murray, Smith & Associates, Inc.
Engineers/Planners
121 S.W. Salmon, Suite 900 Portland, Oregon 97204
PHONE 503-225-9010 FAX 503-225-9022

MSA PROJECT: 14-1524.108 DATE: APRIL 2014

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LEGEND

CONTROLLERS

(C) TRAFFIC SIGNAL CONTROLLER (SEE SIGNAL PLAN).

(C / 332S) INSTALL MODEL 2070E CONTROLLER IN MODEL 332 STRETCH CABINET WITH RISER FRAME ON NEW FOUNDATION. ORIENT FRONT (LOUVERED) DOOR AS SHOWN. SEE SPECIAL PROVISIONS AND ODOT STANDARD DRAWING TM482 FOR DETAILS. CABINET SHALL BE EQUIPPED WITH AN ELECTRIC FAN(S) WITH BALL OR ROLLER BEARINGS AND A CAPACITY OF AT LEAST 5.6 M^3 TOTAL OF FREE AIR DELIVERY PER MINUTE. THE FAN(S) SHALL BE MOUNTED WITHIN THE HOUSING AND VENTED. CABINET SHALL BE POWDER COATED BLACK.

(RX / CC) REMOVE EXISTING FLASHER CABINET.

POLES

(CCSM / XL) INSTALL ROUND TRAFFIC SIGNAL MAST ARM POLE WITH ORNAMENTAL BASE AND LUMINAIRE EXTENSION PER CLACKAMAS COUNTY STANDARDS. SEE "POLE ENTRANCE CHART" ON SHEET TS-5, SHEETS TS-7 AND TS-8, AND SPECIAL PROVISIONS. FOUNDATION TO BE FLUSH WITH FINISHED GRADE OF SIDEWALK. POLES, MAST ARMS, LUMINAIRE ARMS, AND ORNAMENTAL BASE COVERS TO BE PROVIDED BY THE CITY OF WEST LINN. SEE SPECIAL PROVISIONS FOR DETAILS.

(MA / L) INSTALL (L) FT. TRAFFIC SIGNAL MAST ARM. TO BE PROVIDED BY CITY.

(LA / L) INSTALL (L) FT. LUMINAIRE ARM. TO BE PROVIDED BY CITY.

(PP) INSTALL PEDESTRIAN PEDESTAL WITH ORNAMENTAL BASE, HADCO SP5730J. POWDER COATED BLACK.

(RX / SP) REMOVE EXISTING STRAIN POLE AND TERMINAL CABINET.

JUNCTION BOXES

(JB / 1) INSTALL 17"X10"X12" (MIN. DIMENSION) PRECAST CONCRETE JUNCTION BOX.

(JB / 1A) INSTALL 17"X10"X12" (MIN. DIMENSION) PRECAST CONCRETE JUNCTION BOX WITH CONCRETE APRON.

(JB / 2A) INSTALL 22"X12"X12" (MIN. DIMENSION) PRECAST CONCRETE JUNCTION BOX WITH CONCRETE APRON.

(JB / 3A) INSTALL 30"X17"X12" (MIN. DIMENSION) PRECAST POLYMER CONCRETE JUNCTION BOX WITH CONCRETE APRON.

(JB / DP) JUNCTION BOX (SEE DETECTOR PLAN).

(SP / S) INSTALL 6" MAX. SAND POCKET BLOCK-OUT WITH (S=SIZE) INCH CONDUIT TO JUNCTION BOX.

(JB / IR) INSTALL A GREEN BLANK CARSON MODEL 1419 WITH COVER COLDCASTLE SKU14191024) OR EQUAL APPROVED JUNCTION BOX. SEE SHEET TS-6 FOR IRRIGATION INSTALLATION DETAILS.

SIGNS

(N) INSTALL NEW LED ILLUMINATED SIGN (N=NUMBER). SEE SHEET TS-6 FOR DETAILS.

(AL / 10) INSTALL ALUMINUM (30"X36", TYPE "W7") "LEFT TURN YIELD TO ONCOMING TRAFFIC" SIGN (OR17-1)

SIGNALS

(V / Ph) INSTALL PHASE (PH) VEHICLE SIGNAL WITH RED, AMBER AND GREEN LEDS.

(P/B / Ph) INSTALL PHASE (PH) PEDESTRIAN SIGNAL WITH LED COUNTDOWN TIMER, AUDIBLE PEDESTRIAN SIGNAL (APS) PUSHBUTTON ASSEMBLY, AND INSTRUCTION SIGN. (SEE "POLE ENTRANCE CHART", DETAIL SHEET TS-5 AND SPECIAL PROVISIONS).

(A / Ph) INSTALL PHASE (PH) AUDIBLE PEDESTRIAN SIGNAL (APS) PUSHBUTTON ASSEMBLY, AND INSTRUCTION SIGN. (SEE "POLE ENTRANCE CHART", DETAIL SHEET TS-5 AND SPECIAL PROVISIONS).

(C / Ph) INSTALL PHASE (PH) PEDESTRIAN SIGNAL WITH LED COUNTDOWN TIMER. (SEE "POLE ENTRANCE CHART", DETAIL SHEET TS-5 AND SPECIAL PROVISIONS).

CABINETS

(TC) TRAFFIC SIGNAL POLE SHALL HAVE RECESSED TERMINAL CABINET PER CLACKAMAS COUNTY STANDARDS WITH COPPER NEUTRAL BAR AND MARATHON 1112 OR EQUIVALENT TERMINAL BLOCKS AS CONNECTORS.

(AW) INSTALL FOUCH BASE MOUNTED FLIP TOP METERED PEDESTAL PART #0600-0074-00 (STAINLESS STEEL) AND MOUNTING BASE ON NEW FOUNDATIONS (SEE SIGNAL DETAILS, SHEET TS-9). PEDESTAL SHALL BE POWDER COATED BLACK.

(RX / MS) REMOVE EXISTING METER BASE.

FIRE PRE-EMPTION

(FN / Ch) INSTALL CHANNEL (CH), (N) BARREL FIRE PREEMPTION DETECTOR UNIT.

(FF / Ch) INSTALL CHANNEL (Ch=CHANNEL) FIRE PREEMPTION DETECTOR FEEDER CABLE.

LOOPS

(LD / Ph) INSTALL PHASE (PH=PHASE) 6' ROUND VEHICLE DETECTOR LOOP.

(LB / Ph) INSTALL PHASE (PH=PHASE) 2½' DIAMOND BICYCLE DETECTOR LOOP.

WIRES

(X-N / G) INSTALL (X)-(N) CONDUCTOR, NO. (G) AWG TRAFFIC SIGNAL CABLE (TYPE 19-1 IMSA).

(LF / X-Ph) INSTALL (X=NUMBER OF CABLES) PHASE (Ph=PHASE) LOOP FEEDER CABLES.

(N / LW) INSTALL (N=NUMBER) PAIR OF LOOP WIRES.

[N-C] INSTALL (N=NUMBER) NO. 8 TYPE THWN (SIGNAL SYSTEM COMMON).

[N-G] INSTALL (N=NUMBER) NO. (G) STRANDED COPPER WIRE (GROUND).

[TC] INSTALL 3 CONDUCTOR, 10 AWG TYPE TC CABLE. SEE SPECIAL PROVISIONS. CABLE TO BE RUN TO EACH POLE AND HAVE NO SPLICES.

CONDUITS

(S) INSTALL (S=SIZE) INCH ELECTRICAL CONDUIT.

(DC) DETECTOR CONDUIT (SEE DETECTOR PLAN).

(W) INSTALL CONDUIT AS REQUIRED BY UTILITY COMPANY. CONTACT MIKE HIEB, PGE AT 503-672-5483 FOR PGE REQUIREMENTS AND COORDINATE POWER CONNECTION.

(HDD) INSTALL CONDUIT BY HORIZONTAL DIRECTIONAL DRILLING, OPEN TRENCH NOT ALLOWED.

(TEL) INSTALL 2 INCH CONDUIT FOR TELEPHONE CONNECTION. CONTACT KENNETH SCIULLI, CENTURY LINK. AT 503-242-0304 TO COORDINATE PHONE CONNECTION, TELEPHONE VAULT LOCATION, AND UTILITY REQUIREMENTS.

LUMINAIRES

(LED) INSTALL 120V LED LUMINAIRE. LED LUMINAIRE SHALL BE CREE LEDWAY, CATALOG #STR-LWY-2M-HT-12-D-UL-BK-700-43K.

(PE / 1) INSTALL PHOTO CONTROL ELECTRONIC RELAY INSIDE SERVICE CABINET. SEE SHEET TS-9 FOR DETAILS.

X = NUMBER OF CABLES SHOWN
N = NUMBER SHOWN
G = AWG SIZE SHOWN

SIGNAL HEAD TYPES

2 = 12"R, 12"Y, 12"G
6L = 12"RLTA, 12"YLTA, 12"FYLTA, 12"GLTA
B = ADJUSTABLE SKYBRACKET (NO TENON)
AB = ADJUSTABLE SKYBRACKET (NO TENON)
UM = UNDER-HANG MOUNT

GENERAL NOTES

1. ALL JUNCTION BOXES SHALL BE PLACED IN SIDEWALK OR CONCRETE APRON.
2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE OREGON STANDARD DRAWINGS, OREGON SPECIFICATIONS FOR CONSTRUCTION AND THE SPECIAL PROVISIONS FOR THIS CONTRACT.
3. INSTALL #12 STRANDED COPPER (ORANGE) TRACER WIRE IN ALL CONDUITS.
4. CONDUIT SHALL BE PLACED IN THE SAME TRENCH WITH OTHER CONDUITS WHEN POSSIBLE.
5. TOP OF SIGNAL AND PEDESTRIAN POLE FOUNDATIONS SHALL MATCH TOP OF FINISHED GRADE OF SIDEWALK.
6. ALL CONDUIT RUNS TO BE WITHIN RIGHT-OF-WAY.
7. INSTALL POLY PULL TAPE (1800 LBF MIN. STRENGTH, NON CONDUCTIVE) IN ALL CONDUITS.
8. ALL UNDERGROUND CONDUITS AND FITTINGS SHALL BE SCHEDULE 80 PVC.
9. INSTALL CONDUITS IN JOINT TRENCH WHERE FEASIBLE. SEE SHEET C-4 FOR LOCATION OF COMMON TRENCH.

ACCOMPANIED BY ODOT STANDARD DWGS: TM450, TM457, TM458, TM460, TM462, TM465, TM467, TM472, TM475, TM480, TM482, TM485.

NO.	DATE	REVISION	BY

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 15, 1988 — BRIAN K. COPELAND — EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ: NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE: **TRAFFIC SIGNAL PLAN LEGEND**

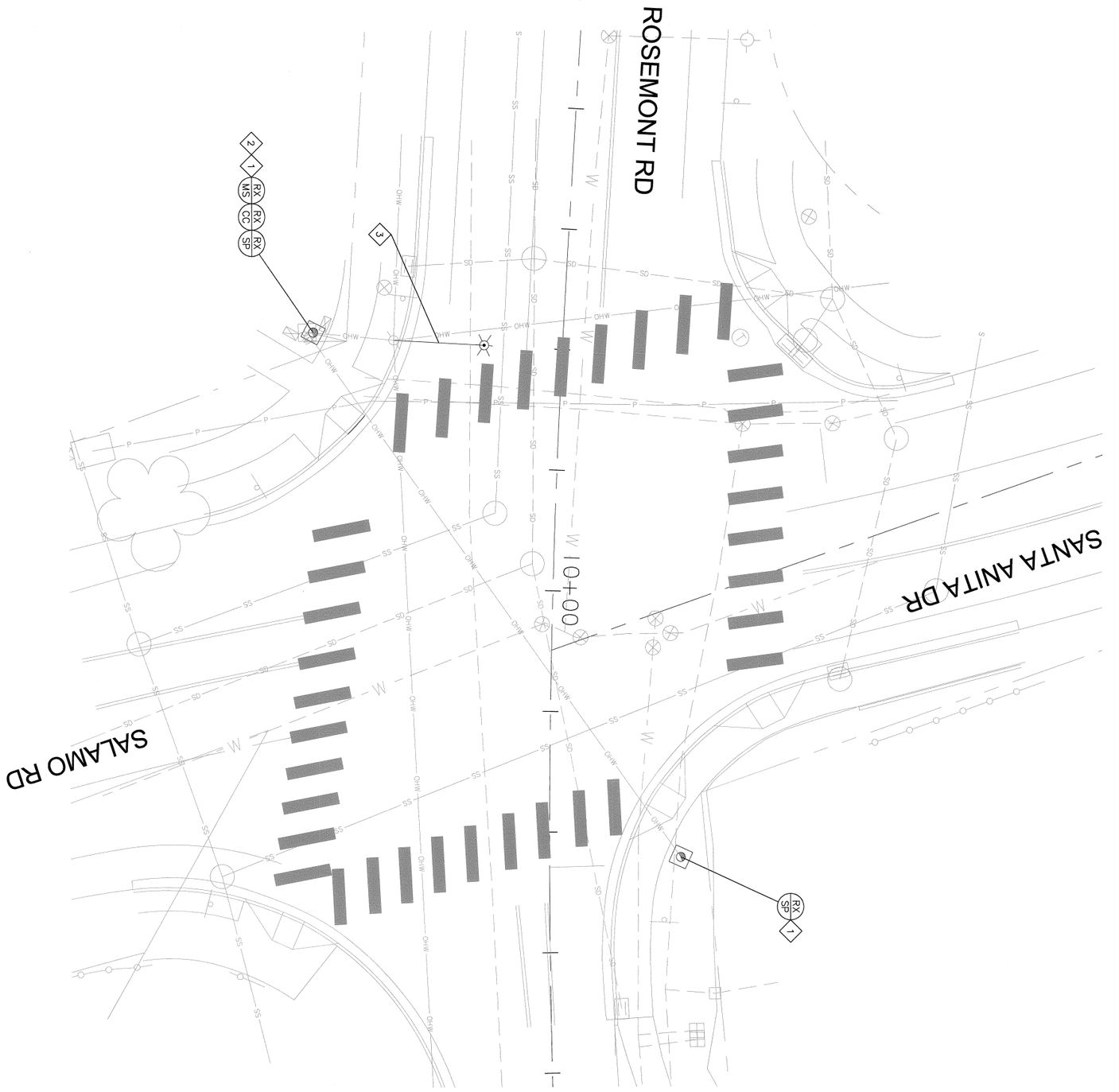
SHEET TS-1
16 OF 26

DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

MSA PROJECT: 14-1521.201
DATE: 4/15/2014

CONSTRUCTION NOTES

1. REMOVE EXISTING OVERHEAD FLASHING SYSTEM INCLUDING SIGNALS AND WIRING.
2. CONTACT PGE FOR POWER DISCONNECT. COORDINATE WITH MIKE HIEB, PGE AT 503-672-5483.
3. LUMINAIRE TO BE REMOVED BY PGE. COORDINATE WITH MIKE HIEB AT 503-672-5483.



SCALE: 1" = 10'

DKS	720 SW Washington Street, Suite 500 Portland, Oregon 97205 (503) 243-3500 www.dksassociates.com	
MSA PROJECT: 14-1521.201	DATE: 4/15/2014	

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE:
TRAFFIC SIGNAL REMOVAL PLAN

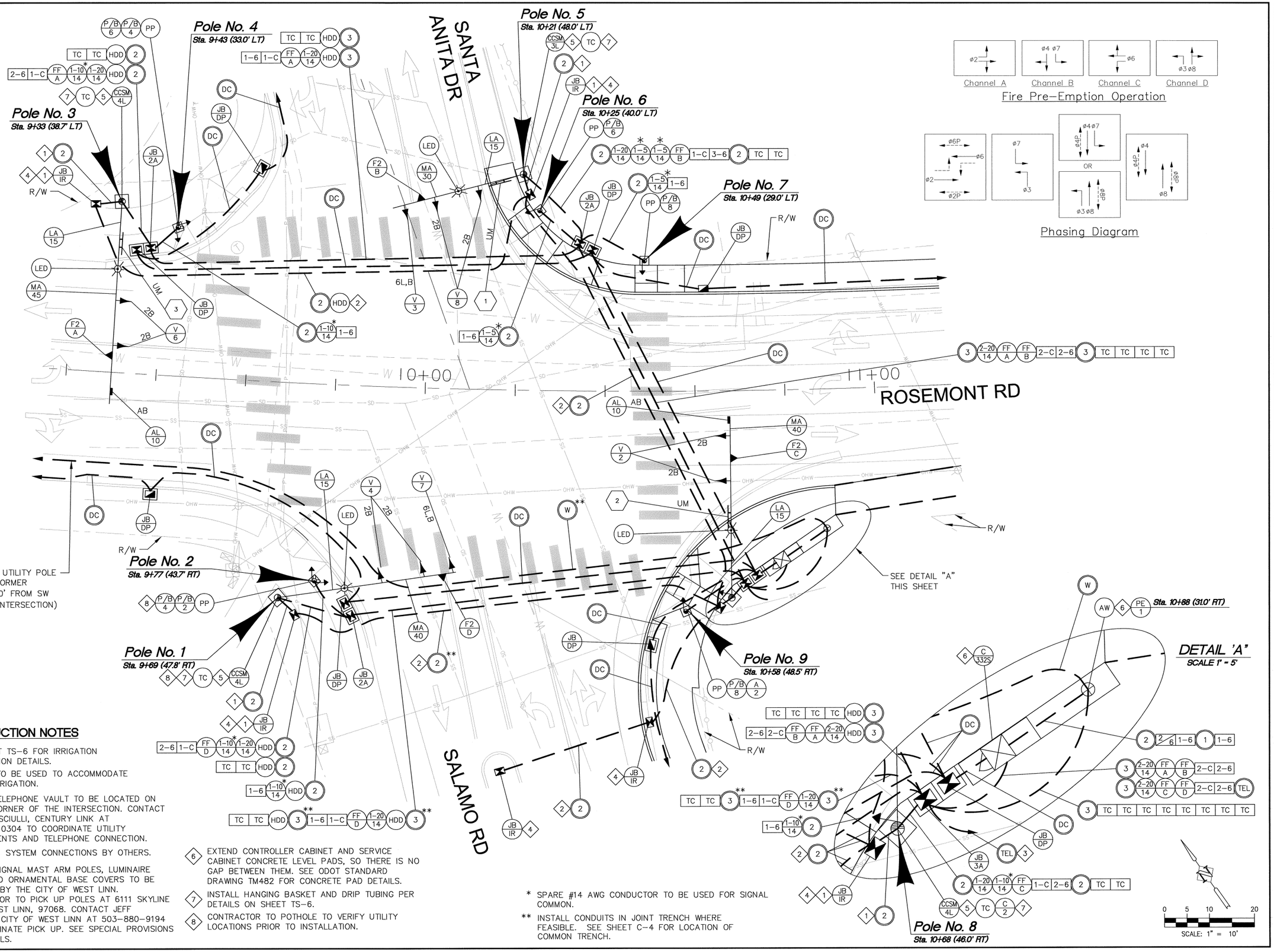
SCALE VERT:
HORIZ:
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
18,503
OREGON
JULY 10, 1998
BRIAN K. COPELAND
EXPIRES: DEC. 31, 2015

NO.	DATE	REVISION	BY

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

SHEET
TS-2
17OF26



CONSTRUCTION NOTES

1. SEE SHEET TS-6 FOR IRRIGATION INSTALLATION DETAILS.
2. CONDUIT TO BE USED TO ACCOMMODATE FUTURE IRRIGATION.
3. FUTURE TELEPHONE VAULT TO BE LOCATED ON THE SE CORNER OF THE INTERSECTION. CONTACT KENNETH SCIULLI, CENTURY LINK AT 503-242-0304 TO COORDINATE UTILITY REQUIREMENTS AND TELEPHONE CONNECTION.
4. IRRIGATION SYSTEM CONNECTIONS BY OTHERS.
5. TRAFFIC SIGNAL MAST ARM POLES, LUMINAIRE ARMS, AND ORNAMENTAL BASE COVERS TO BE SUPPLIED BY THE CITY OF WEST LINN. CONTRACTOR TO PICK UP POLES AT 6111 SKYLINE DRIVE, WEST LINN, 97068. CONTACT JEFF RANDALL, CITY OF WEST LINN AT 503-880-9194 TO COORDINATE PICK UP. SEE SPECIAL PROVISIONS FOR DETAILS.
6. EXTEND CONTROLLER CABINET AND SERVICE CABINET CONCRETE LEVEL PADS, SO THERE IS NO GAP BETWEEN THEM. SEE ODOT STANDARD DRAWING TM482 FOR CONCRETE PAD DETAILS.
7. INSTALL HANGING BASKET AND DRIP TUBING PER DETAILS ON SHEET TS-6.
8. CONTRACTOR TO POTHOLE TO VERIFY UTILITY LOCATIONS PRIOR TO INSTALLATION.

* SPARE #14 AWG CONDUCTOR TO BE USED FOR SIGNAL COMMON.

** INSTALL CONDUITS IN JOINT TRENCH WHERE FEASIBLE. SEE SHEET C-4 FOR LOCATION OF COMMON TRENCH.

NO.	DATE	REVISION	BY

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

SHEET TS-3
18OF26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 10, 1998 BRIAN K. COPELAND
EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ: NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

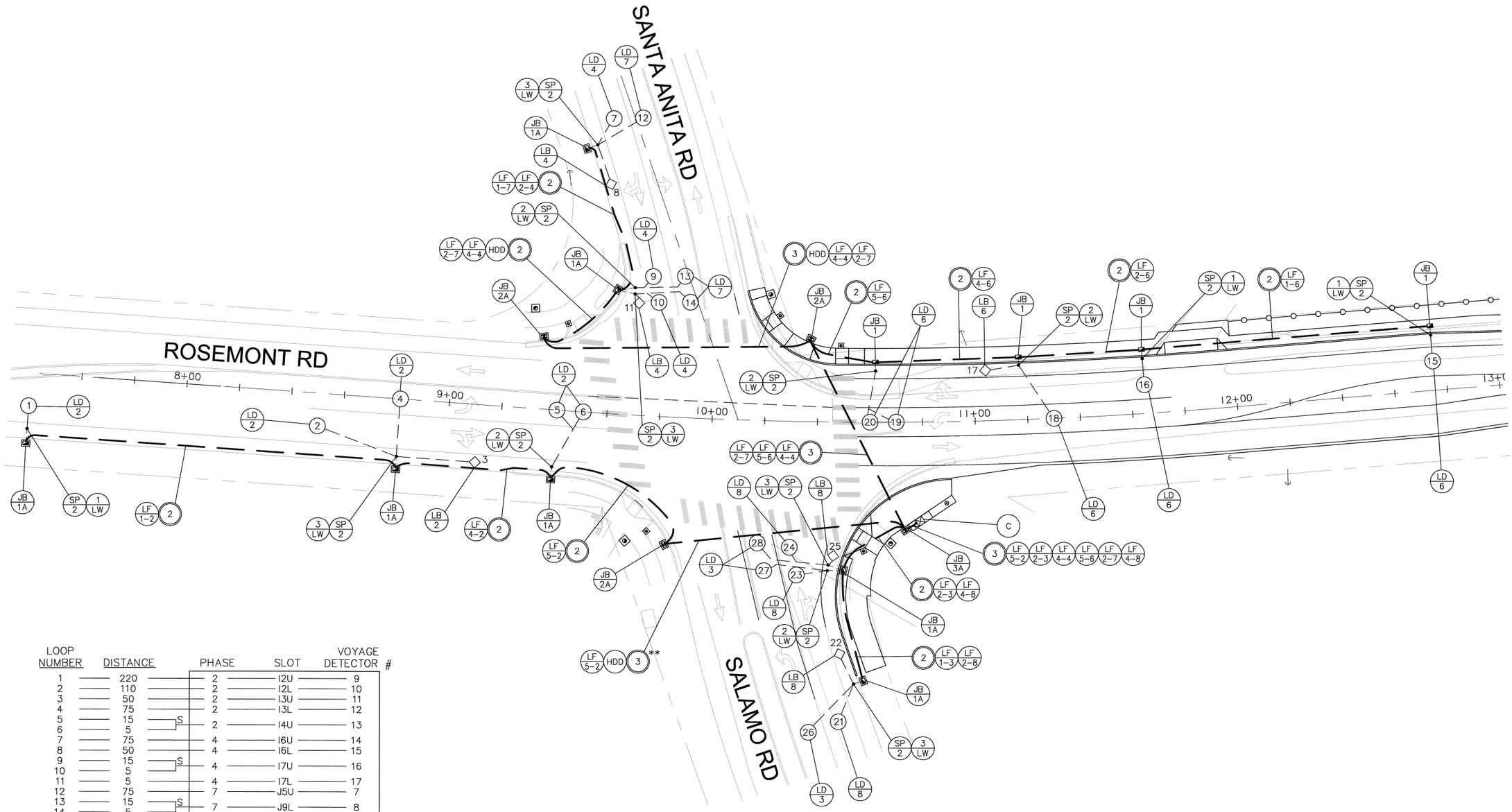
PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: **TRAFFIC SIGNAL PLAN**

DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

DATE: 4/15/2014
MSA PROJECT: 14-1521.201

X:\Projects\2014\P14015-000 (West Linn Santa Anita)\ACAD\TS-03.dwg Layout1 4/16/2014 8:22 AM REH 19.0s (LMS Tech)



LOOP NUMBER	DISTANCE		PHASE	SLOT	VOYAGE DETECTOR #
1	220		2	I2U	9
2	110		2	I2L	10
3	50		2	I3U	11
4	75		2	I3L	12
5	15	S	2	I4U	13
6	5				
7	75		4	I6U	14
8	50		4	I6L	15
9	15	S	4	I7U	16
10	5				
11	5		4	I7L	17
12	75		7	J5U	7
13	15	S	7	J9L	8
14	5				
15	220		6	J2U	19
16	110		6	J2L	20
17	50		6	J3U	21
18	75		6	J3L	22
19	15	S	6	J4U	23
20	5				
21	75		8	J6U	24
22	50		8	J6L	25
23	15	S	8	J7U	26
24	5				
25	5		8	J7L	27
26	75		3	I5U	3
27	15	S	3	I9L	4
28	5				

LOOP DETECTOR WIRING DIAGRAM

"Distance" is from Stop Line to center of loop in feet

** INSTALL CONDUITS IN JOINT TRENCH WHERE FEASIBLE. SEE SHEET C-4 FOR LOCATION OF COMMON TRENCH.

NOTE:
LOOPS ON ROSEMONT RD WERE DESIGNED WITH A DESIGN SPEED OF 35 MPH.

0 10 20 40
SCALE: 1" = 20'

NO.	DATE	REVISION	BY

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

SHEET TS-4
19 OF 26

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 1998
BRIAN K. COPELAND
EXPIRES DEC. 31, 2015

SCALE VERT.: HORIZ.:
NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME:
CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE:
DETECTOR PLAN

DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

DATE: 4/15/2014

MSA PROJECT: 14-1521.201

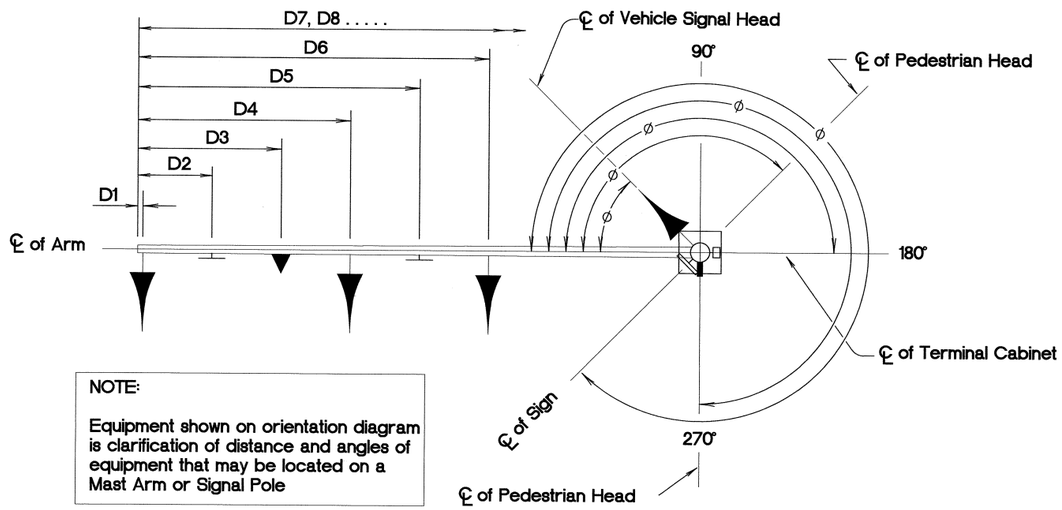
X:\Projects\2014\P14015-000 (West Linn Santa Anita)\ACAD\TS-04.dwg Layout1 4/15/2014 7:23 PM REH 19.0s (LMS Tech)

POLE ENTRANCE CHART

See TM457 and Clackamas County Mast Arm Std. Dwg. and Special Provisions			EQUIPMENT ON POLE					EQUIPMENT ON MAST ARM OR SPAN WIRE (Length in Feet and Equipment Type)									FOUNDATION INFORMATION See TM457, Sheets 10B.4/10B.5 and Special Provisions	LUMINAIRES				FIXTURE	
POLE NO.	DWG. NO.	TYPE	PED. SIGNAL DEG.	PED. PUSH BUTTON DEG.	PUSH BUTTON ARROW	TERM. CABINET DEG.	3/4" THREADOLET/ FLOWER POT ARM	ARM LENGTH	D1	D2	D3	D4	D5	D6	D7	D8	REQUIRED FOUNDATION DEPTH	ARM LENGTH	ARM DEG.	MOUNTING HEIGHT	TYPE	TYPE	LAMP
1	TS-3	CCSM4L				135	***	40	0.5 V6L	3.0 F	7.0 V2	16.5 V2					**	15'	0	40'	LED	II	120 LED
2	TS-3	PP	200/310	35/310	LT/LT												*						
3	TS-3	CCSM4L				225	***	45	1.5 SA	10.0 F	13.0 V2	23.0 V2	35.0 SNS				**	15'	0	40'	LED	II	120 LED
4	TS-3	PP	35/125	35/125	LT/LT												*						
5	TS-3	CCSM3L				225	***	30	2.5 V6L	6.5 F	9.5 V2	19.5 V2	24.5 SNS				**	15'	0	40'	LED	II	120 LED
6	TS-3	PP	210	210	LT												*						
7	TS-3	PP	305	305	RT												*						
8	TS-3	CCSM4L	0			135	***	40	0.5 SA	4.0 V2	9.0 F	14.0 V2	22.0 SNS				**	15'	0	40'	LED	II	120 LED
9	TS-3	PP	300	35/130	RT/RT												*						

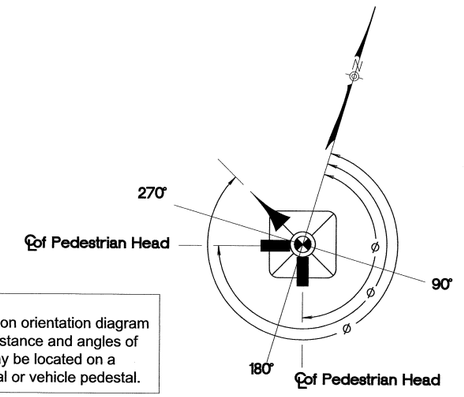
BRACKET MOUNT (SEE TRAFFIC SIGNAL PLAN FOR MOUNT TYPE):
V2 = Traffic Signal Type 2 w/ Adjustable Sky Bracket Mount, See Traffic Signal Plan
V6L = Traffic Signal Type 6L w/ Adjustable Sky Bracket Mount, See Traffic Signal Plan
SA = Sign, 30"x36" Aluminum w/ Adjustable Skybracket Mount (See ODOT Standard Drawing TM462 for Details)
SNS = LED Illuminated Street Name Sign, Under-Hang Mount. See Sheet TS-6 For Details.

MISC. ITEMS:
F = Fire Preemption, Mount to 3/4" Threadolet.
* = See ODOT Standard Drawing TM457 for foundation details.
** = See Sheet TS-8 For Foundation Depth.
*** = See Sheet TS-6 For 3/4" Threadolet Mounting Height Details. Threadolet Location and Orientation of Flower Pot Arm to be Confirmed with Engineer Prior to Installation.



NOTE:
Equipment shown on orientation diagram is clarification of distance and angles of equipment that may be located on a Mast Arm or Signal Pole

MAST ARM POLE ORIENTATION DIAGRAM



NOTE:
Equipment shown on orientation diagram is clarification of distance and angles of equipment that may be located on a pedestrian pedestal or vehicle pedestal.

PEDESTRIAN PEDESTAL/ VEHICLE PEDESTAL ORIENTATION DIAGRAM

NO.	DATE	REVISION	BY

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 10, 1970 BRIAN K. CRUICKSHANK EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ: NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

SHEET TS-5 20OF26

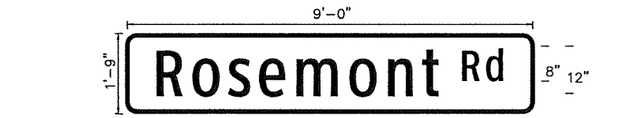
PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: **TRAFFIC SIGNAL PLAN DETAILS**

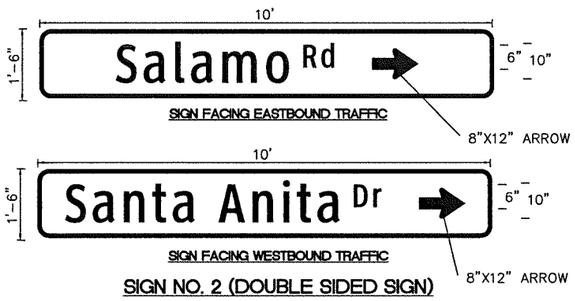
DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

DATE: 4/15/2014
MSA PROJECT: 14-1521.201

X:\Projects\2014\P14015-000 (West Linn Santa Anita)\ACAD\TS-05.dwg Layout1 4/15/2014 8:08 PM MTL 19.0s (LMS Tech)



SIGN NO. 1 (DOUBLE SIDED SIGN)



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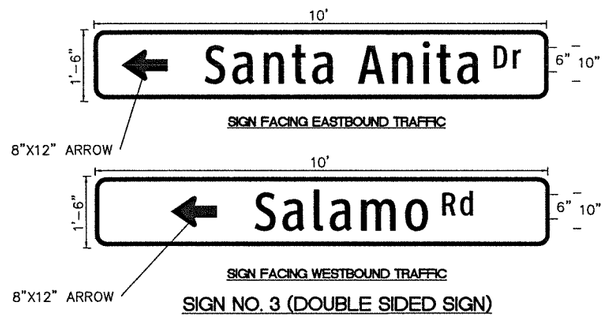


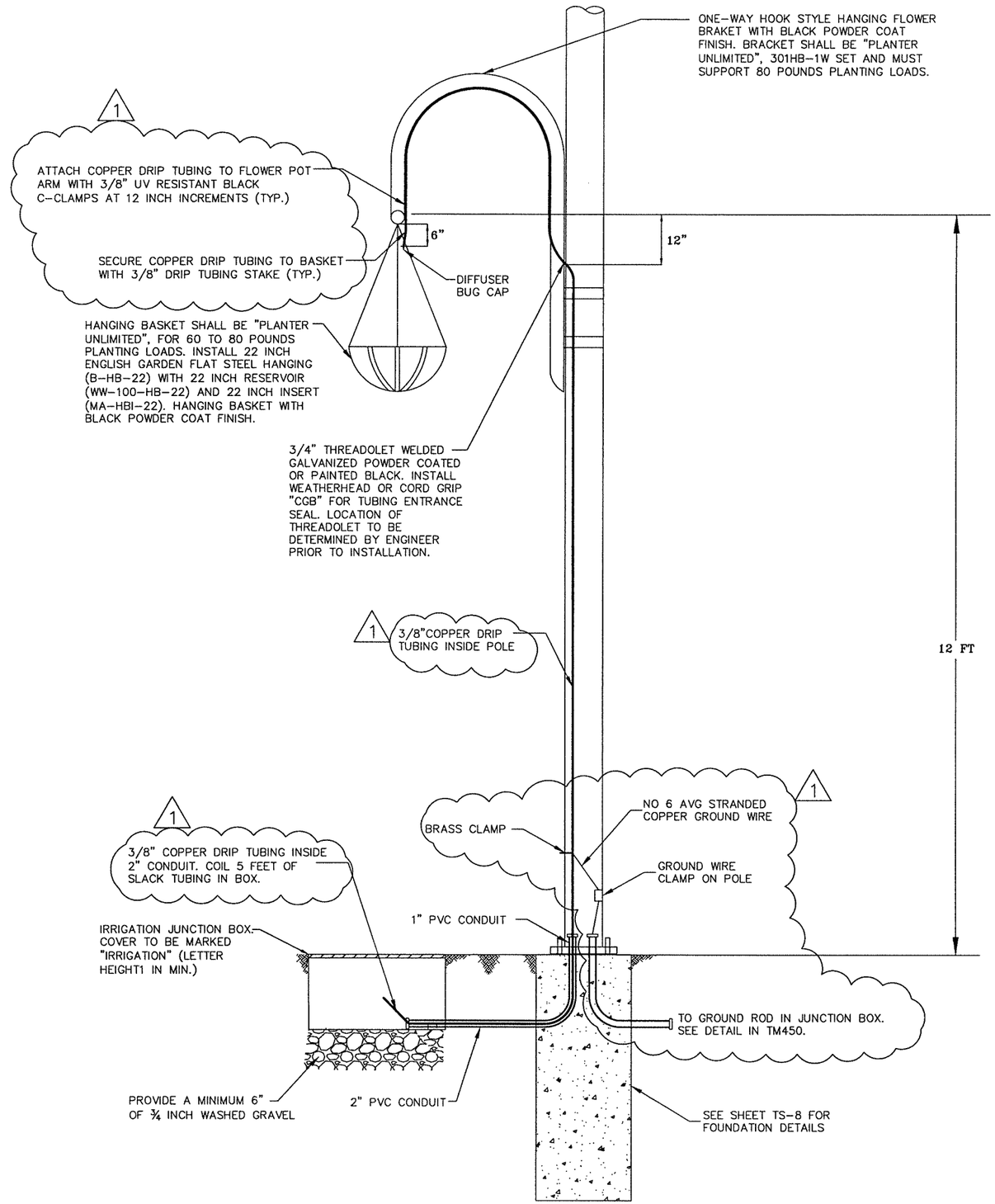
SIGN NO. 3 (DOUBLE SIDED SIGN)

LED ILLUMINATED STREET NAME SIGNS

SIGN DIMENSIONS MAY NEED TO BE MODIFIED TO ACCOMMODATE MANUFACTURER REQUIREMENTS. UPDATED DIMENSIONS SHALL MEET CLACKAMAS COUNTY STANDARDS, DRAWING T100.

NOTES

1. SEE CLACKAMAS COUNTY STANDARD DRAWING T100 FOR STREET NAME SIGN DETAILS.
2. "CLEARVIEW" FONT SHALL BE USED FOR STREET NAME SIGNS.
3. INSTALL INTERNALLY ILLUMINATED LED STREET NAME SIGN. SIGN CABINET SHALL HAVE HINGED FACE WITH PROP ROD OR SLIDE – LOCK FRAME AND BE EXTRUDED ALUMINUM. SIGN SHALL HAVE A BLACK POWDER COATED FINISH. SIGN SHEETING SHALL BE 3M ELECTROCUT WITH WHITE LETTERS/BORDER AND GREEN BACKGROUND. SIGN SHALL BE "TEMPLE EDGE–LIT" OR APPROVED EQUAL. MAXIMUM SIGN WEIGHT SHALL BE 5 LBS PER SQUARE FOOT.
4. SIGN TO BE UNDER–HANG MOUNTED. USE PELCO BRACKETS SE–5015, SE–5146 OR APPROVED EQUAL.



NO.	DATE	REVISION	BY
1	5/5/14	ADD 1 – REVISED IRRIGATION DETAIL	MTL/BKC

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

SHEET TS–6
21 OF 26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 10, 1998 BRIAN K. CORTELAND
EXPIRES: DEC. 31, 2015

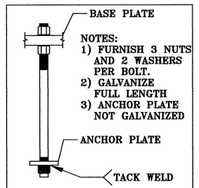
SCALE VERT: HORIZ:
NOTICE
IF THIS BAR DOES NOT MEASURE 1", THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

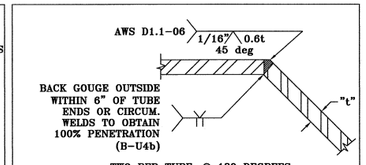
SHEET TITLE: **IRRIGATION AND SIGN DETAILS**

DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

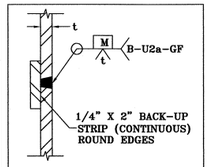
MSA PROJECT: 14–1521.201
DATE: 4/15/2014



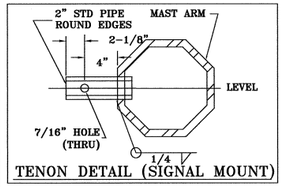
ANCHOR BOLT DETAIL



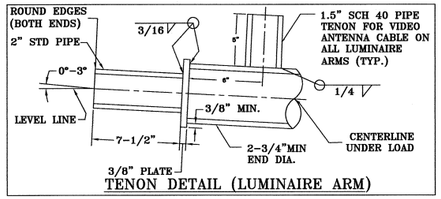
LONGITUDINAL WELD DETAIL



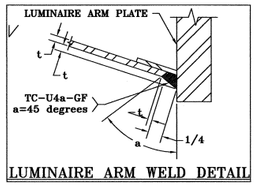
CIRCUMFERENTIAL WELD DETAIL



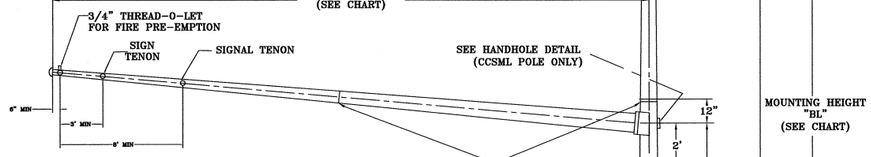
TENON DETAIL (SIGNAL MOUNT)

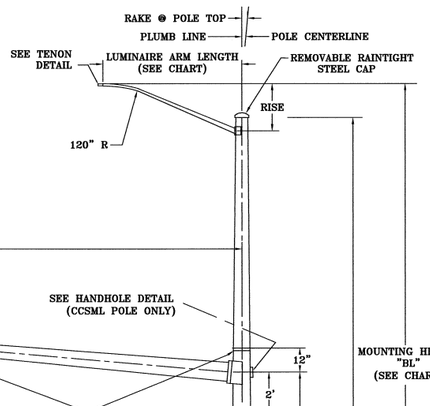


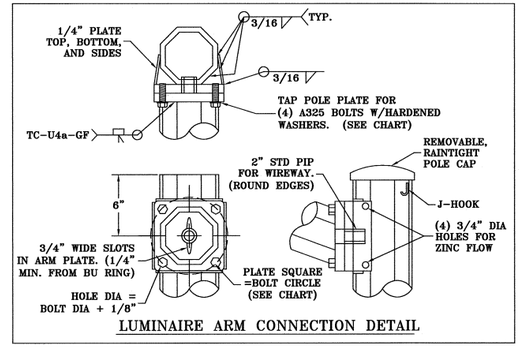
TENON DETAIL (LUMINAIRE ARM)



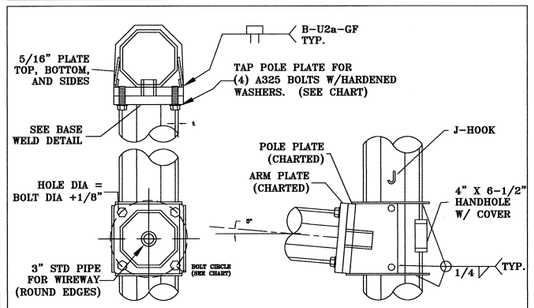
LUMINAIRE ARM WELD DETAIL



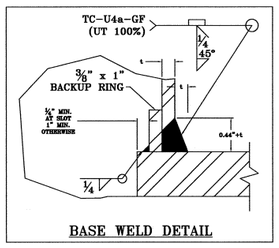




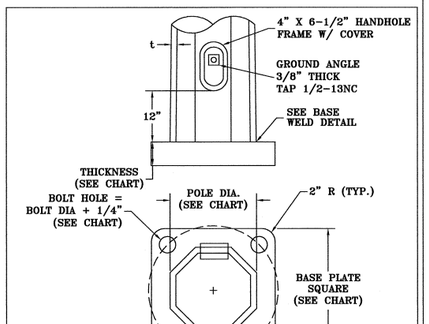
LUMINAIRE ARM CONNECTION DETAIL



SIGNAL ARM CONNECTION DETAIL



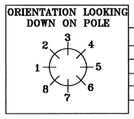
BASE WELD DETAIL



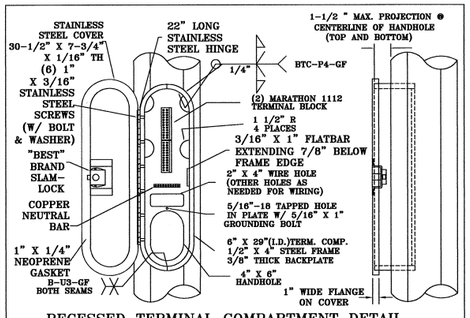
POLE BASE DETAIL

LUMINAIRE ARM DATA TABLE								
ARM LENGTH (FT)	APPROX. RISE (IN)	THICK-NESS (IN)	BASE DIA. (IN)	SQUARE (IN)	BOLT CIRCLE (IN)	ARM PL THICK-NESS (IN)	POLE PL THICK-NESS (IN)	BOLT DIA x L (INxIN)
6.0	18.0	0.1875	4.5	9.0	9.0	1.0	1.0	3/4x2.5
8.0	30.0	0.1875	5.0	9.0	9.0	1.0	1.0	3/4x2.5
10.0	41.0	0.1875	6.0	9.0	9.0	1.0	1.0	3/4x2.5
12.0	53.0	0.1875	6.5	9.0	9.0	1.0	1.0	3/4x2.5
15.0	70.0	0.1875	6.5	9.0	9.0	1.0	1.0	3/4x2.5
20.0	72.0	0.25	6.5	9.0	9.0	1.0	1.0	3/4x2.5
25.0	78.0	0.25	6.5	9.0	9.0	1.0	1.0	3/4x2.5

ORIENTATION LOOKING DOWN ON POLE

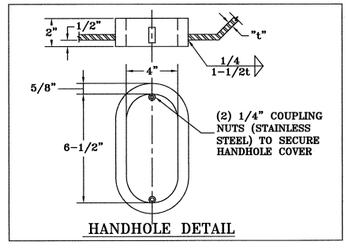


POLE ENTRANCE CHART									
POLE NUMBER									
LUMINAIRE ARM									
MAST ARM									
TERMINAL CABINET									



RECESSED TERMINAL COMPARTMENT DETAIL

POLE SCHEDULE															INTERSECTION:
POLE #	POLE DESIGNATION	MAST ARM LENGTH (FT)	POLE HEIGHT (FT)	MAST ARM HEIGHT (FT)	LUM. MOUNTING HEIGHT (FT)	LUM. ARM LENGTH (FT)	TENON LOCATIONS FROM END OF ARM (FT) #1	#2	#3	#4	#5	#6	#7	NOTES



HANDHOLE DETAIL

POLE DATA TABLE								
POLE DESIGNATION	ARM LENGTH (FT)	BASE DIA. (IN)	THICK-NESS (IN)	SQUARE (IN)	BOLT CIRCLE (IN)	BASE PL THICK-NESS (IN)	ANCHOR BOLT DIA x L (INxIN)	ANCHOR PL SQ x THK (INxIN)
CCSM1	≤15	12	0.1875	18.5	18.0	2.0	2.0x48	5.75x1
CCSM2	16-25	13	0.1875	18.5	18.0	2.0	2.0x48	5.75x1
CCSM3	26-35	14	0.25	20.5	20.0	2.25	2.25x48	5.75x1
CCSM4	36-45	15	0.3125	20.5	20.0	2.25	2.25x48	5.75x1
CCSM5	46-60	17	0.375	24.0	23.0	2.5	2.75x48	7x1.13
CCSM1L	≤15	12	0.25	18.5	18.0	2.0	2.0x48	5.75x1
CCSM2L	16-25	13	0.25	19.0	18.0	2.0	2.25x48	5.75x1
CCSM3L	26-35	14	0.3125(1)	20.5	20.0	2.25	2.25x48	5.75x1
CCSM4L	36-45	15	0.3125(1)	22.5	22.0	2.25	2.5x48	6.38x1.13
CCSM5L	46-60	17	0.375(1)	24.0	23.0	2.5	2.75x48	7x1.13
(1) REDUCE SHAFT THICKNESS TO 0.25" 20' FROM BASE								

ARM DATA TABLE									
ARM LENGTH (FT)	OCTAGONAL CROSS SECTION BASE DIA. (IN)	OCTAGONAL CROSS SECTION THICK-NESS (IN)	ROUND CROSS SECTION BASE DIA. (IN)	ROUND CROSS SECTION THICK-NESS (IN)	SQUARE (IN)	BOLT CIRCLE (IN)	ARM PL THICK-NESS (IN)	POLE PL THICK-NESS (IN)	BOLT DIA x L (INxIN)
15.0	6.0	0.1875	6.0	0.1675	12	12	1.5	1.25	1.25x3
20.0	7.0	0.1875	8.0	0.1793	12	12	1.5	1.25	1.25x3
25.0	8.0	0.1875	9.0	0.2391	12	12	1.5	1.25	1.25x3
30.0	9.0	0.25	11.0	0.2391	14	14	1.75	1.5	1.25x3.5
35.0	10.0	0.25	11.0	0.3125	14	14	1.75	1.5	1.25x3.5
40.0	11.0	0.25	12.0	0.3125	17	17	2.0	1.5	1.5x3.5
45.0	13.0	0.375	13.0	0.375	17	17	2.0	1.5	1.5x3.5
50.0	14.0	0.375(1)	14.0	0.375(1)	20	19.5	2.25	1.75	1.75x4
55.0	15.0	0.375(1)	15.0	0.375(1)	20	19.5	2.25	1.75	1.75x4
60.0	16.0	0.375(1)	16.0	0.375(1)	21	21.0	2.25	1.75	1.75x4
(1) REDUCE ARM THICKNESS TO 0.25" 20' FROM BASE									

NOTES:

DESIGN CRITERIA
2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.
-100 MPH 3 SECOND GUST
-GUST FACTOR G=1.14
-Ir=1.0 (50 YR. RECURRENCE INTERVAL)
-FATIGUE CATEGORY II, NO GALLOPING, TRUCK SPEED = 55 MPH

GENERAL
-POLES, MAST ARMS, AND LUMINAIRE ARMS SHALL BE OCTAGONAL OR ROUND IN CROSS SECTION AND HAVE A TAPER OF 0.14 IN/FT.
-FABRICATION SHALL CONFORM TO 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.
-FASTENERS LESS THEN 1/2" SHALL BE STAINLESS STEEL OR BRASS.

MATERIALS
-ALL STEEL IN TUBES, BASE PLATES, FLANGE PLATES & GUSSET PLATES SHALL CONFORM TO ASTM A572 GR50.
-ANCHOR BOLTS SHALL CONFORM TO ASTM A307C, NUTS SHALL CONFORM TO ASTM A563 GR DH HEAVY HEX, WASHERS SHALL CONFORM TO ASTM F436 TYPE 1.
-CONNECTION BOLTS SHALL CONFORM TO ASTM A325, WASHERS SHALL CONFORM TO ASTM F436 TYPE 1.
-GALVANIZING SHALL CONFORM TO ASTM A123 & A153.
-PIPE TENONS AND WIRE GUIDES SHALL CONFORM TO ASTM A53 GR B.
-STAINLESS STEEL RECESSED TERMINAL COMPARTMENT DOOR CONFORM TO AISI SS304.

THIS SHEET FOR REFERENCE ONLY. TRAFFIC SIGNAL MAST ARM POLES AND LUMINAIRE ARMS TO BE PROVIDED BY CITY OF WEST LINN.

NO.	REVISION	DATE
1.	UPDATED DESIGN CALCS	11/14/07
2.	ADDED FULL PEN. BASE WELD	5/16/08
3.	ADDED ROUND CROSS SECTION	6/30/09
4.	MOD. BC DIM & ADDED TAG	3/14/12

NORTHWEST SIGNAL SUPPLY, INC
12965 SW Herman Rd. - Tualatin, OR 97062
PH 503-635-4351, FAX 503-635-4341

CLACKAMAS COUNTY MAST ARM STANDARD
TYPE CCSM AND TYPE CCSML

DESIGNED BY	DATE	DRAWN BY	DATE
D. EMSLIE	3/21/07	D. EMSLIE	3/21/07

DRAWING NUMBER: NWS4700
SHEET 1 OF 1

NO.	DATE	REVISION	BY

SHEET TS-7
220F26

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

REGISTERED PROFESSIONAL ENGINEER BRIAN K. COPELAND 18503 OREGON JULY 1, 1970 EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ:
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: TRAFFIC SIGNAL PLAN DETAILS

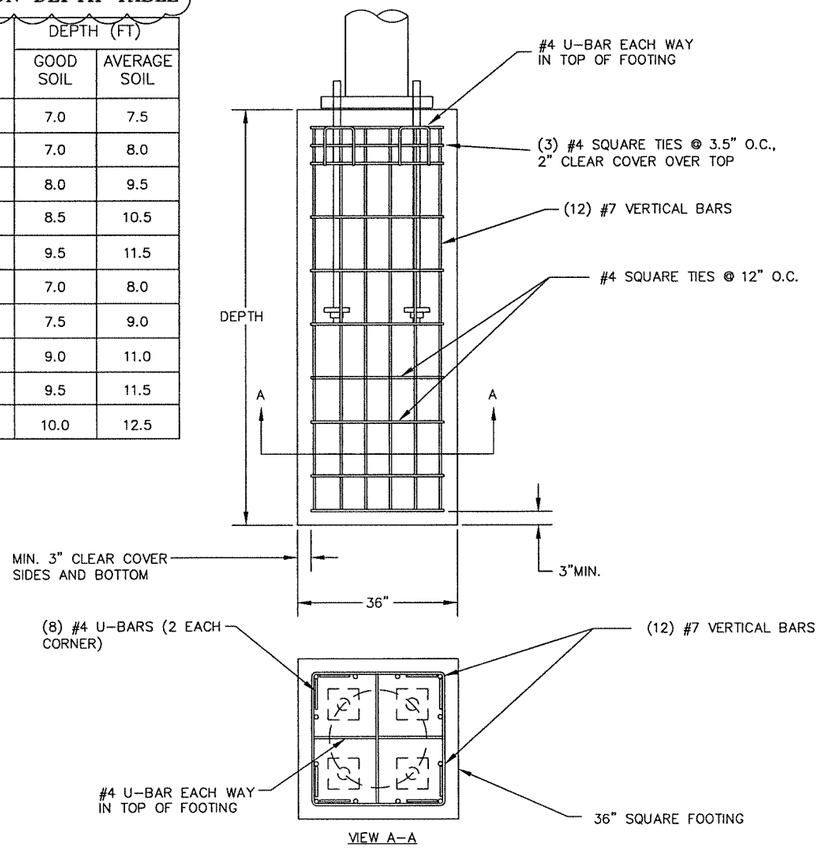
DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

DATE: 4/15/2014
MSA PROJECT: 14-1521.201

X:\Projects\2014\P14015-000 (West Linn Santa Anita)\ACAD\TS-07.dwg Layout1 4/15/2014 6:09 PM REH 19.0s (LMS Tech)

1 FOUNDATION DEPTH TABLE

POLE DESIGATION	DEPTH (FT)	
	GOOD SOIL	AVERAGE SOIL
CCSM1	7.0	7.5
CCSM2	7.0	8.0
CCSM3	8.0	9.5
CCSM4	8.5	10.5
CCSM5	9.5	11.5
CCSM1L	7.0	8.0
CCSM2L	7.5	9.0
CCSM3L	9.0	11.0
CCSM4L	9.5	11.5
CCSM5L	10.0	12.5



NOTES:

1. Vertical steel bars should be equally spaced around the perimeter of the footing allowing for a minimum of 3" of concrete cover over the ties.

2. Vertical steel shall be ASTM A615 Gr 60 (rebar).

3. Minimum concrete strength, f'c = 3,000 psi

4. Concrete shall be poured against undisturbed soil. If the top layer of the soil is disturbed it shall be discounted and the footing depth shall be increased accordingly.

5. The top 4" shall be placed (using concrete or a non-shrinking grout) after installing the pole and appurtenances.

1

6. Contractor responsible for providing geotechnical analysis and report to determine soil conditions that fall into the "good soild" or "average soil" categories from the Foundation Depth Table. The analysis and report shall be stamped by a registered engineer in the state of Oregon. One boring shall be conducted at a location to be determined by the City of West Linn.

NO.	REVISION	DATE
1	FOUNDATION DEPTH UPDATED	11/19/07

CLACKAMAS COUNTY
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
150 BEAVERCREEK ROAD OREGON CITY, OREGON

CLACKAMAS COUNTY MAST ARM FOUNDATION STANDARD

DESIGNED BY	DATE	DRAWN BY	DATE
D. EMSLIE	3/21/07	D. EMSLIE	3/21/07

DRAWING NUMBER: NWS4710
SHEET 1 OF 1

NO.	DATE	REVISION	BY
1	5/5/14	ADD 1 - REVISED FOUNDATION DEPTH TABLE AND NOTES	MTL/BKC

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 10, 1985 BRIAN K. CORTELAND EXPIRES DEC. 31, 2015

SCALE VERT: HORIZ:
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE: TRAFFIC SIGNAL PLAN DETAILS

SHEET TS-8
23OF26

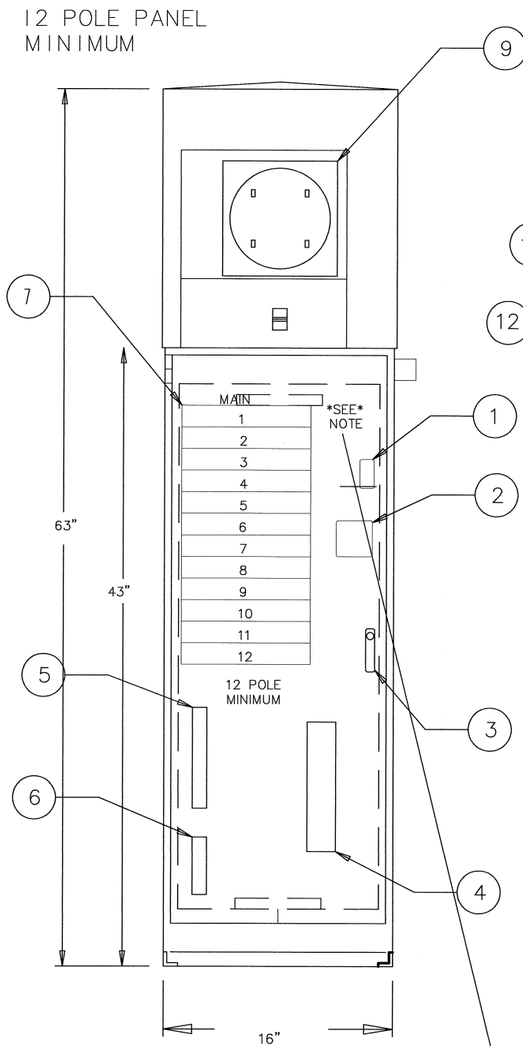
DKS
720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

MSA PROJECT: 14-1521.201
DATE: 4/15/2014

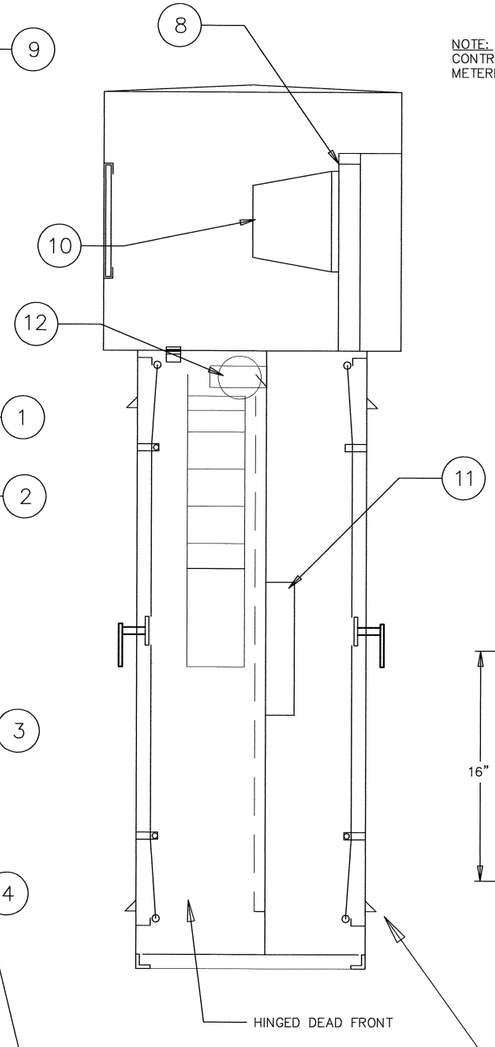
X:\Projects\2014\P14015-000 (West Linn Santa Anita)\ACAD\TS-08.dwg Layout1 5/5/2014 11:20 AM REH 19.0s (LMS Tech)

NEMA 3-R METERED BASE MOUNT SERVICE CABINET CLACKAMAS COUNTY

12 POLE PANEL
MINIMUM

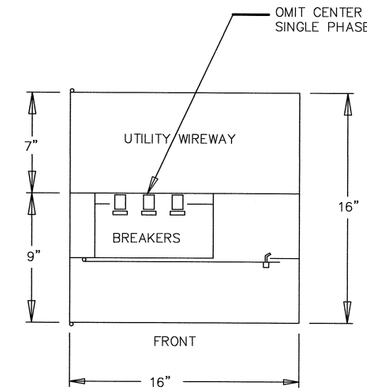


FRONT VIEW

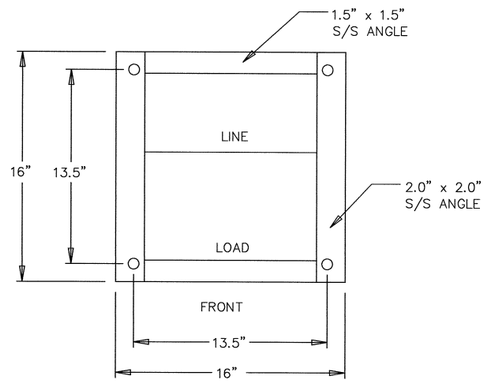


SIDE VIEW

NOTE:
CONTRACTOR TO VERIFY UTILITY METERING REQUIREMENTS!



PLAN VIEW



BASE MOUNTING

NOTE:
PE CELL IS REQUIRED, LOWER TEST SWITCH APP 6" AND INSTALL A GLASTIC BARRIER BETWEEN PANEL AND PE CELL

4. UL 67 LABELED PANELBOARD
3. UL 50 LISTED AS SERVICE ENTRANCE EQUIPMENT LABLED CUTOUT BOX NEMA 3R
2. DEADFRONT CONSTRUCTED OF 14 GA TYPE 304 #4 SS BACKPAN 12GA TYPE 304 SS
1. CABINET CONSTRUCTED OF 14-GA TYPE-304 SS (GALVANIZED, PAINTED, MILD STEEL OPTIONAL)

NOTE:
MARATHON 1206 TERMINAL BLOCKS PROVIDED.
WIRE RANGE IS #18 – #4 CU. CUSTOMER MUST NOTIFY IF OTHER SIZES ARE REQUIRED.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
00	first drawing	07/02/2003	P.D.W.

POLE#	DESCRIPTION
1	1–100–2 "MAIN"
2	" " "
3	1–30–2 "ILLUMINATION"
4	" " "
5	1–60–1 "SIGNAL"
6	1–15–1 "CONTROL"
7	1–15–1 "STREET NAME SIGNS" (PHOTO CELL CONTROLLED)
8	1 – POLE SPACE
9	1 – POLE SPACE
10	1 – POLE SPACE
11	1 – POLE SPACE
12	1 – POLE SPACE

Item	Qty	U\M	Description
12	1	EA	PE CELL BEHIND POLYCARBONITE WINDOW WITH LIGHT DEFLECTING COVER
11	1	EA	POWER COMPANY TERMINAL BLOCK
10	1	EA	METER: SUPPLIED BY OTHER
9	1	EA	WINDOW: POLY CARBONATE ONE SIDE SCRATCH RESISTANT
8	1	EA	METERBASE: CIRCLE AW, 20324L, 1–P, 4–JAW, 600–VOLT, 200–AMP.
7	4	EA	BREAKERS: G.E. TYPE T.E.D., 18K, AIC @ 240–VOLT.
6	2	EA	COPPER GROUND BAR
5	2	EA	100% RATED COPPER NEUTRAL.
4	1	EA	TERMINAL BLOCK FOR POWER COMPANY HOOK UP
3	1	EA	HANDLE: PAD LOCKABLE SS 73–NS
2	1	EA	CONTACTOR: G.E. CR360L, 600V, 30A, 120V COIL, 3 POLE (2 POLE FOR ILLUMINATION AND 1 POLE FOR STREET NAME SIGNS)
1	1	EA	TEST SWITCH: HUBBEL 1221 20A 1P 120/277V

BILL OF MATERIALS

FOUCH ELECTRIC MFG. CO. INC.

2138 N INTERSTATE AVE.
PORTLAND, OREGON. 97227

EMAIL: sales@fouch.com
WEB: www.Fouch.com

JOB NAME: CLACKAMAS COUNTY

CONTRACTOR: CLACKAMAS COUNTY

JOB #: TBA

DWG#: 0600-0074-00 | REV: 01 | QTY: 1

SHEET TS-09 24OF26

NO.	DATE	REVISION	BY

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 1998
BRIAN K. COPELAND
EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ:
NOTICE
0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

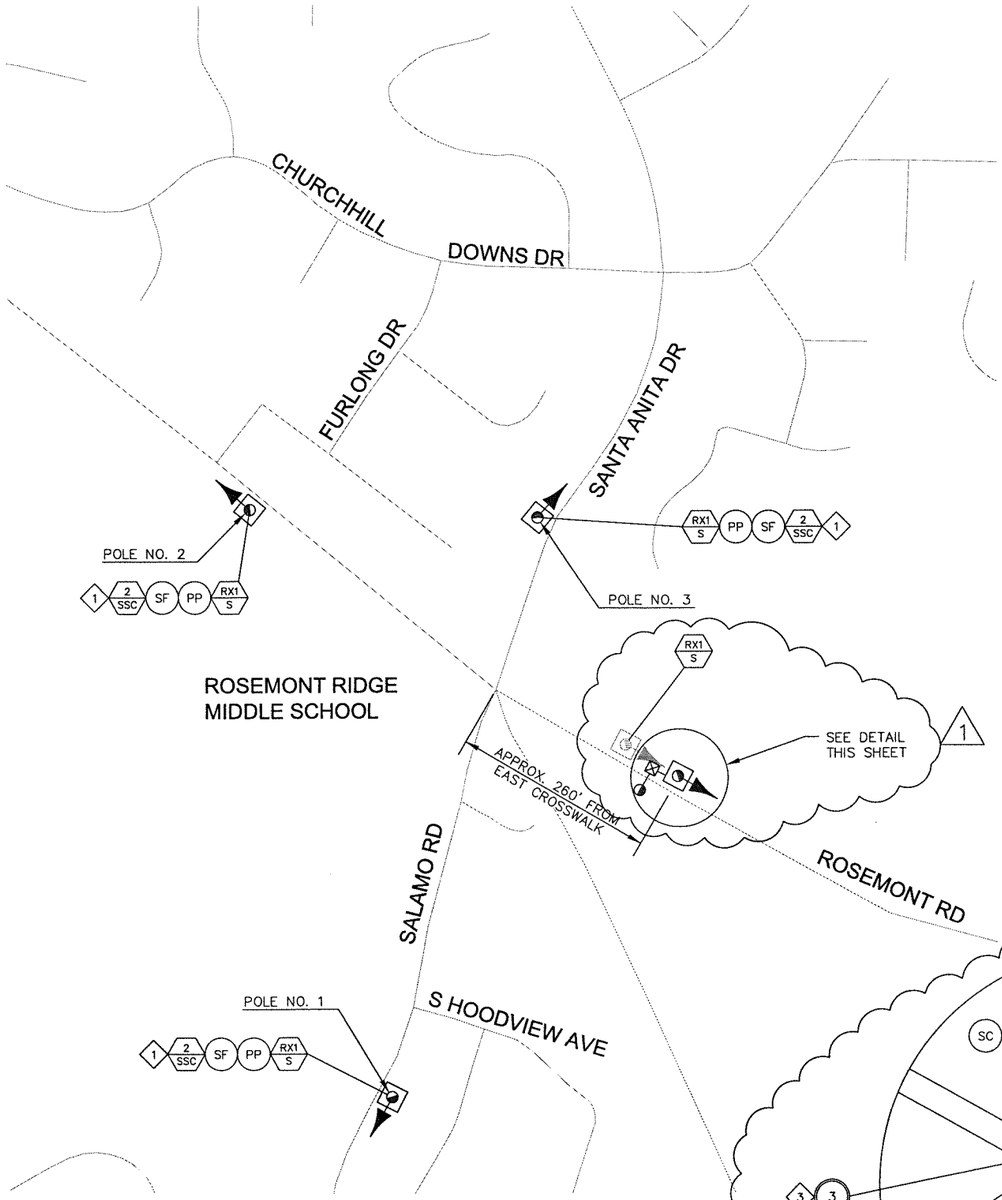
PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE: **TRAFFIC SIGNAL PLAN DETAILS**

720 SW Washington Street, Suite 500
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com
DKS

DATE: 4/15/2014

MSA PROJECT: 14-1521.201



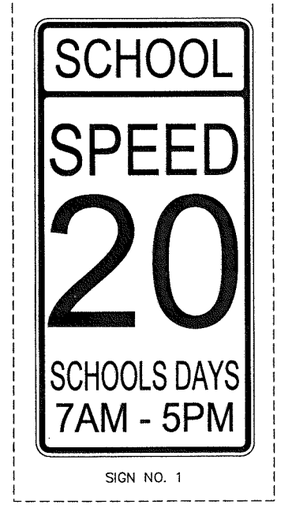
DETAIL "A"

LEGEND

- (PP) INSTALL TRAFFIC SIGNAL PEDESTAL WITH FRANGIBLE BASE.
- (SF) INSTALL SOLAR POWERED SCHOOL ZONE FLASHER. SEE SHEET TS-11 FOR DETAILS.
- (SC) INSTALL FOUCH BASE MOUNTED FLIP TOP METERED PEDESTAL PART# 0600-0074-00 (STAINLESS STEEL) AND MOUNTED BASE ON NEW FOUNDATION. PEDESTAL SHALL BE POWDER COATED BLACK. INSTALL 60 AMP MAIN BREAKER AND ONE 15 AMP BREAKER FOR SCHOOL FLASHER.
- ((S)) INSTALL (S=SIZE) INCH ELECTRICAL CONDUIT.
- (S)G INSTALL ONE NO.(S) BARE COPPER GROUND WIRE.
- (N / S) INSTALL COPPER ELECTRICAL CONDUCTORS (N = NUMBER OF CONDUCTORS, S = SIZE OF CONDUCTORS).
- (SF1) INSTALL AC POWERED SCHOOL ZONE FLASHER (120 VAC). SEE SHEET TS-11 FOR DETAILS.
- (WP) WOOD UTILITY POLE TO BE INSTALLED BY PGE.
- (RXN M) REMOVE EXISTING SIGN (N) AND SIGN SUPPORT (M). SEE SHEET TS-11 FOR DETAILS.
- (N M) INSTALL NEW SIGN (N) ON SIGN SUPPORT (M).
  - N = SIGN NUMBER
  - M = MATERIAL:
    - S = STEEL
    - SSC = STAINLESS STEEL CLAMP

CONSTRUCTION NOTES

1. INSTALL SCHOOL ZONE FLASHER IN SAME LOCATION AS EXISTING SCHOOL SIGN.
2. INSTALL SIGN AT BACK OF SIDEWALK.
3. CONTACT MIKE HIEB, PGE AT 503-672-5483 TO COORDINATE POWER CONNECTION AND VERIFY WOOD POLE LOCATION.
4. PROVIDE AC/DC CONVERTER INSIDE FLASHER CABINET.



SIGN NO. 1

SIGN NO. 2
S5-1 (MUTCD)
24"X48"

NOTE:
SIGNS WITH BROKEN BORDER ARE EXISTING SIGNS.

0 100 200 400
SCALE: 1" = 200'

NO.	DATE	REVISION	BY
1	5/5/14	ADD 1 - REVISED SCHOOL FLASHER N.4 AND ADDED NEW NOTES	MTL/BKC

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

SHEET TS-10
25OF26

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 10, 1981
BRIAN K. COPELAND
EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ:
NOTICE
IF THIS BAR DOES NOT MEASURE 1" THE DRAWING IS NOT TO SCALE
0 1

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD
INTERSECTION IMPROVEMENTS

SHEET TITLE: **SCHOOL ZONE FLASHER PLAN**

DKS
720 SW Washington Street, Suite 500
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(503) 243-3500
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MSA PROJECT: 14-1521.201
DATE: 4/15/2014

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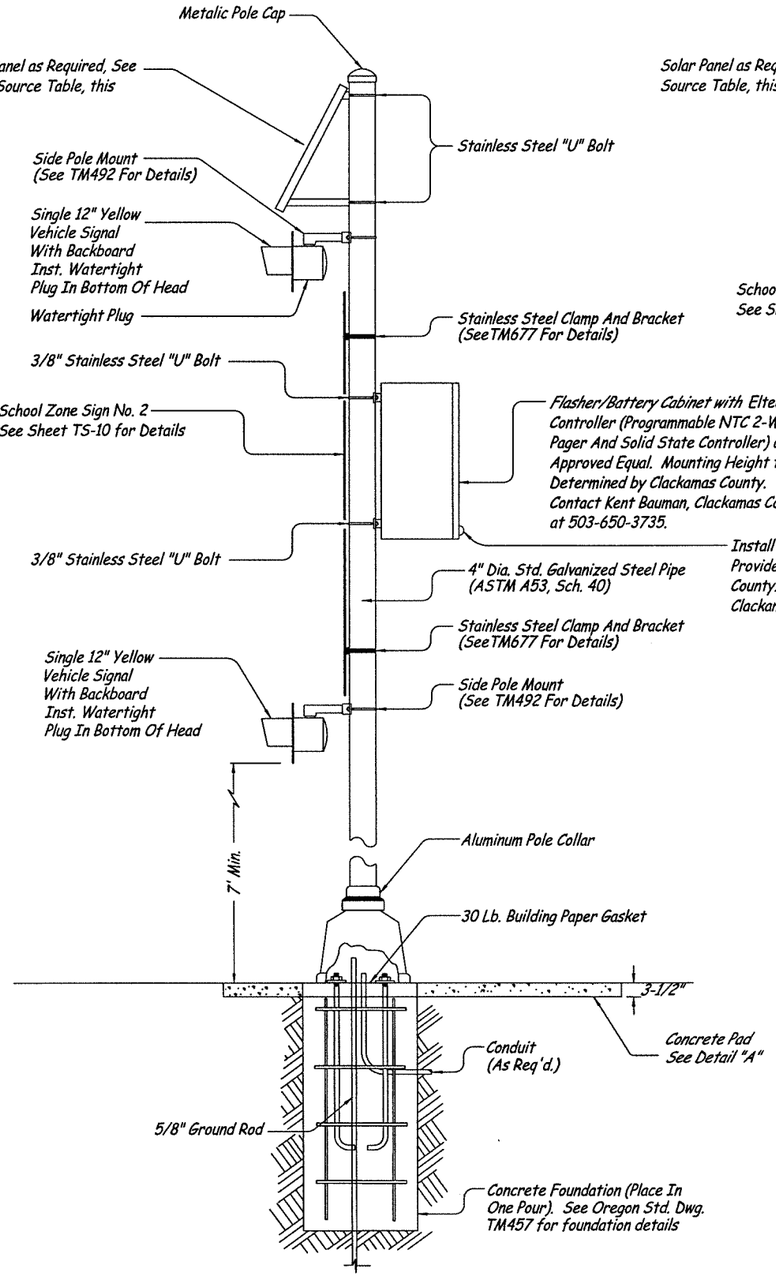
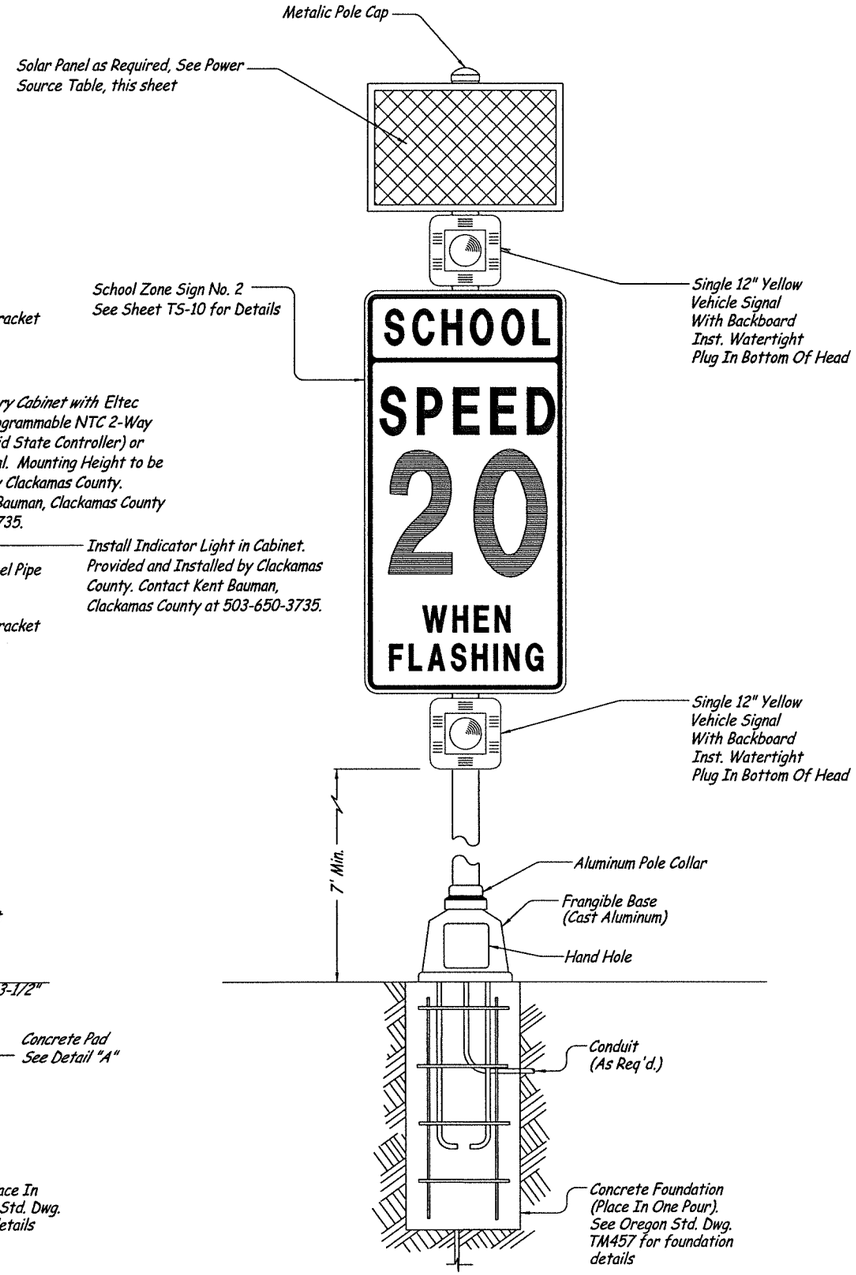


SCHOOL ZONE FLASHER



SCHOOL ZONE FLASHER

POWER SOURCE TABLE

Pole	Power Source
Pole No. 1	Single Solar Panel (140W)
Pole No. 2	Two Solar Panels (140W each)
Pole No. 3	Single Solar Panel (140W)
Pole No. 4	120/240 Volt Power Source

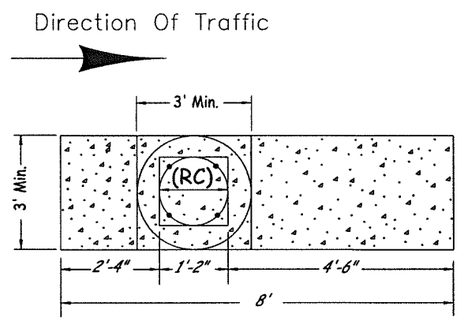
1

NOTES:
1. Refer to ODOT Green Sheets for accepted school zone and activated solar flasher beacon equipment for this project.
2. See Sheet TS-10 for power installation for Pole No. 4.

1

NOTES:

1. Install foundation per standard drawing TM457, Vehicle Signal Pedestal.
2. Mount to foundation per standard drawing TM457.
3. Aim flasher heads so they are visible to motorists.
4. ELTEC TC-2000 2-way paging to be programmed by Clackamas County. Contact Kent Bauman, Clackamas County at 503-650-3735.
5. Poles and frangible bases to be powder coated black. Hardware and equipment shall be black finish.



DETAIL "A"

CONCRETE PAD

NO.	DATE	REVISION	BY
1	5/5/14	ADD 1 – REVISED POWER SOURCE TABLE	MTL/BKC

DESIGNED: MTL
DRAWN: REH
CHECKED: BKC
APPROVED: BKC

SHEET TS-11
260F26

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 19, 2005 BRYAN K. CODY EXPIRES: DEC. 31, 2015

SCALE VERT: HORIZ:
NOTICE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
0 1

PROJECT NAME: CITY OF WEST LINN, OREGON
SANTA ANITA DRIVE AND ROSEMONT ROAD INTERSECTION IMPROVEMENTS

SHEET TITLE: **SCHOOL ZONE FLASHER DETAILS**

DKS
720 SW Washington Street, Suite 600
Portland, Oregon 97205
(503) 243-3500
www.dksassociates.com

MSA PROJECT: 14-1521.201 DATE: 4/15/2014

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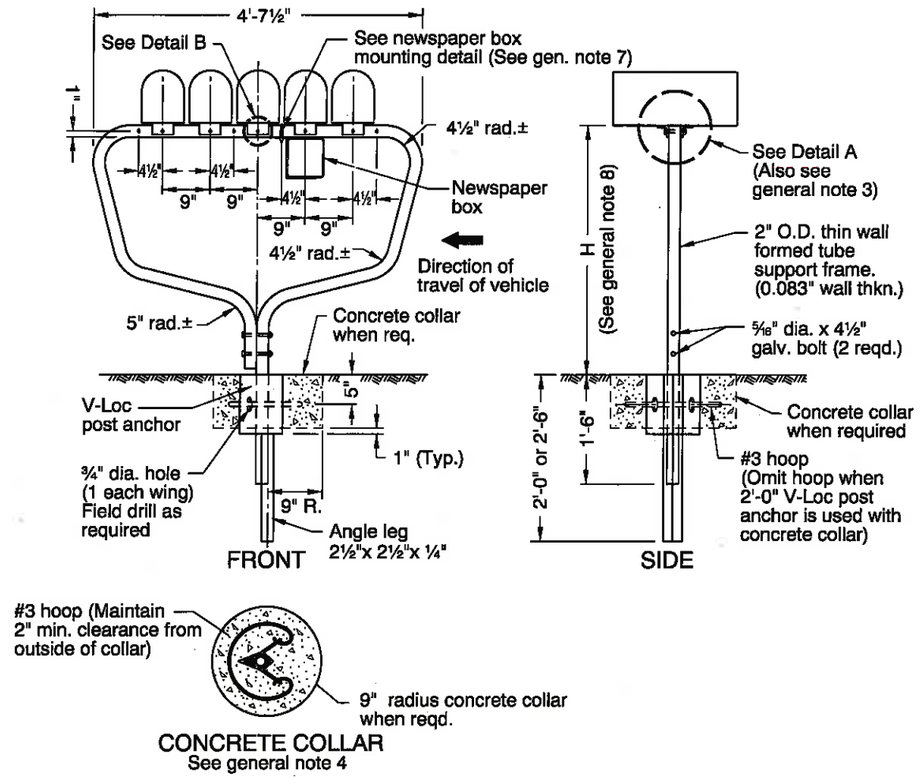
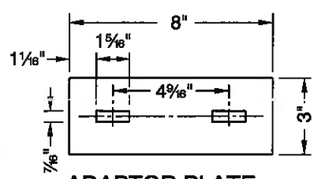
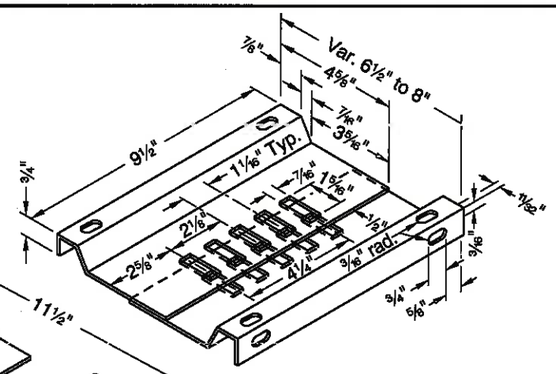


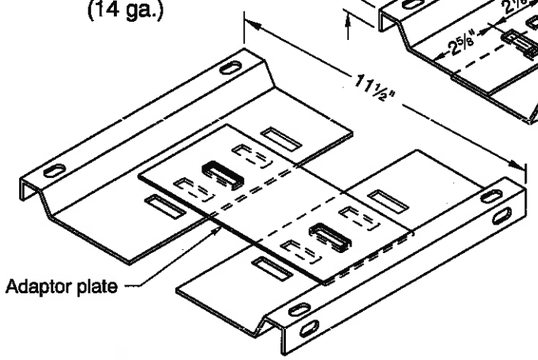
CONCRETE COLLAR
See general note 4

MULTIPLE SUPPORT
(Supports 5 standard (Sizes 1 & 1½) mailboxes or 4 large (Size 2) mailboxes)



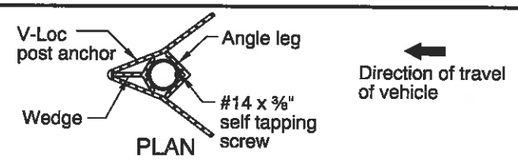
ADAPTOR PLATE
(14 ga.)



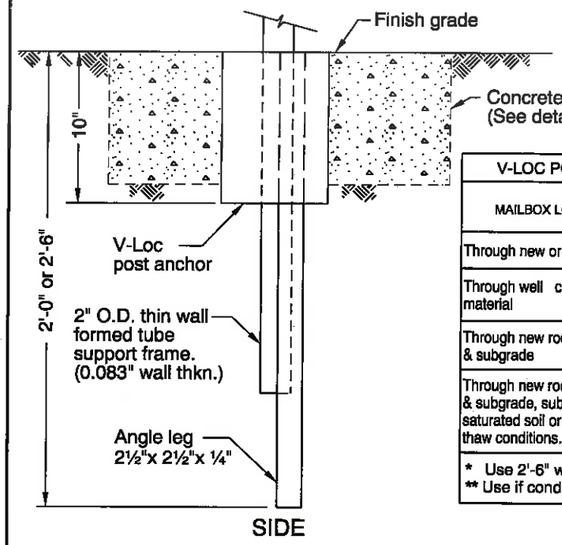


SIZE 1 & 1½
MOUNTING BRACKET
(16 ga.)

SIZE 2
MOUNTING BRACKET (16 ga.)
WITH ADAPTOR PLATE (14 ga.)



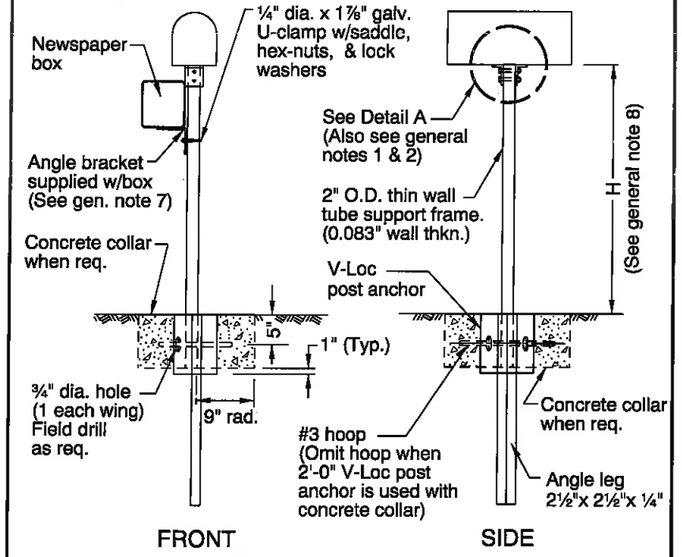
Direction of travel of vehicle



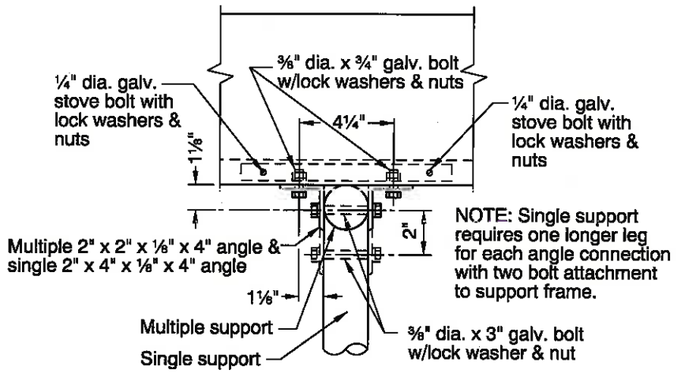
V-LOC POST ANCHOR USE CHART		
MAILBOX LOCATION	SINGLE SUPPORT (ft)	MULTIPLE SUPPORT (ft)
Through new or existing A.C.	2'-0"	2'-0"
Through well consolidated material	2'-0" *	2'-6"
Through new rock surfacing & subgrade	2'-6"	2'-0" conc. collar
Through new rock surfacing & subgrade, subject to saturated soil or freeze/ thaw conditions.	2'-6" 2'-0"/ ** conc. collar	2'-6"/ conc. collar

* Use 2'-6" with size 2 mailbox.
** Use if conditions are severe.

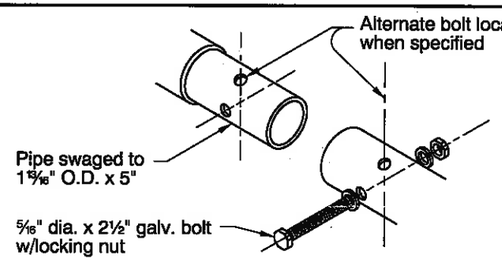
POST MOUNTING SOCKET



SINGLE SUPPORT



DETAIL A



DETAIL B

GENERAL NOTES FOR ALL DETAILS:

1. Angle connections to be parallel to traffic flow for Size 2 mailbox mounted on single post.
2. All holes in the tube support frame are to be predrilled by the manufacturer.
3. Size 2 mailbox mounted on a multiple support requires 2 each ⅜" dia. x ⅝" galv. bolts with lock washers and nuts to attach the adaptor plate to the mounting bracket. The unit will then require 4 angle connections to attach to the formed tube support frame. See Detail A.
4. Concrete collar, when required, to be poured in place after V-Loc post anchor has been installed, level and plumb. Do not excavate below bottom of V-Loc post anchor. Care shall be taken that no concrete is placed within anchor.
5. Other proprietary products available as listed in ODOT's QPL.
6. For mailbox installation locations, see Std. Drg. RD101 and project plans.
7. For Newspaper Box Mounting Detail, see Std. Drg. RD101.
8. Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 27-JUN-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

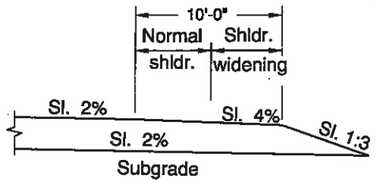
MAILBOX SUPPORT

2008

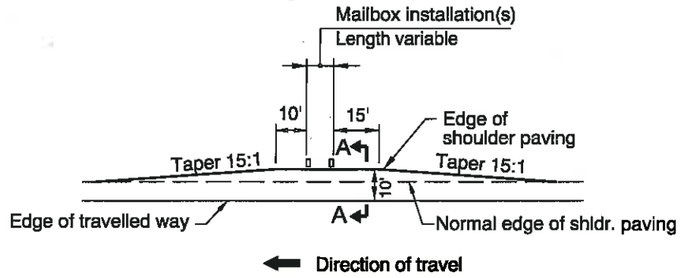
DATE	REVISION DESCRIPTION
07-2010	REVISED DETAILS AND NOTES
07-2011	REVISED DETAILS AND NOTES

rd100.dgn 15-JUL-2011

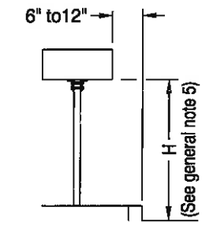
RD100



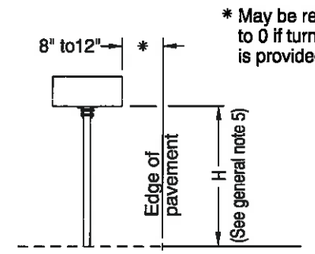
SECTION A-A



MAILBOX SERVICE TURNOUT

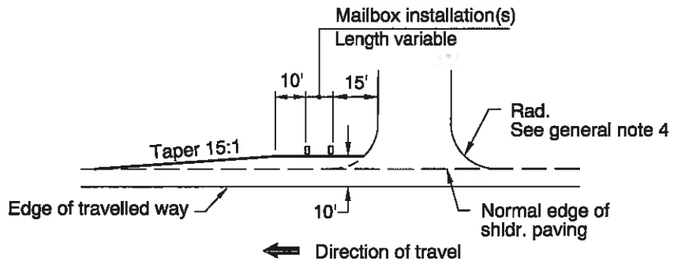


CURBED SECTION

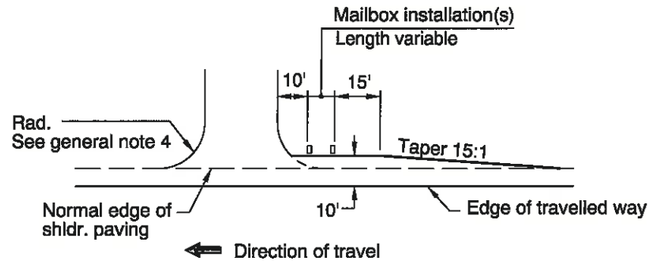


NON-CURBED SECTION

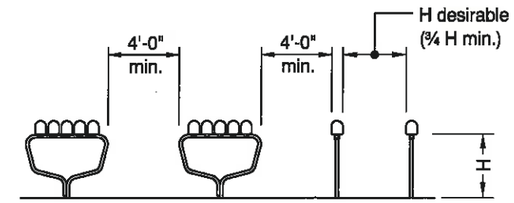
PLACEMENT



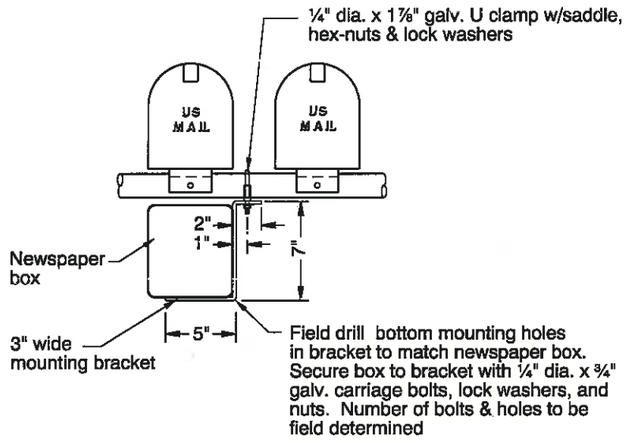
MAILBOX SERVICE TURNOUT AFTER APPROACH



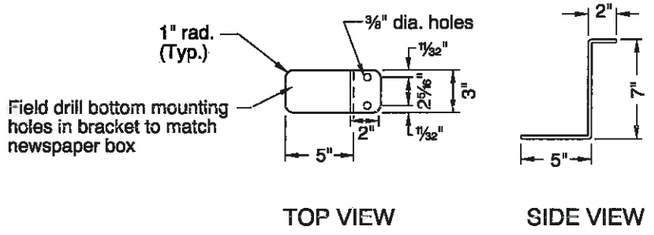
MAILBOX SERVICE TURNOUT BEFORE APPROACH



SUPPORT SPACING



NEWSPAPER BOX MOUNTING DETAIL



NEWSPAPER BOX MOUNTING BRACKET DETAIL (14 ga.)

GENERAL NOTES FOR ALL DETAILS:

1. All holes in the tube support frame are to be predrilled by the manufacturer.
2. Other proprietary products available as listed in ODOT's QPL.
3. For mailbox support details, see Std. Drg. RD100.
4. For approach details, see Std. Drg. RD715.
5. Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 27-JUN-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MAILBOX INSTALLATION

2008

DATE	REVISION DESCRIPTION
07-2011	REVISED NOTE

rd101.dgn 15-JUL-2011

RD101

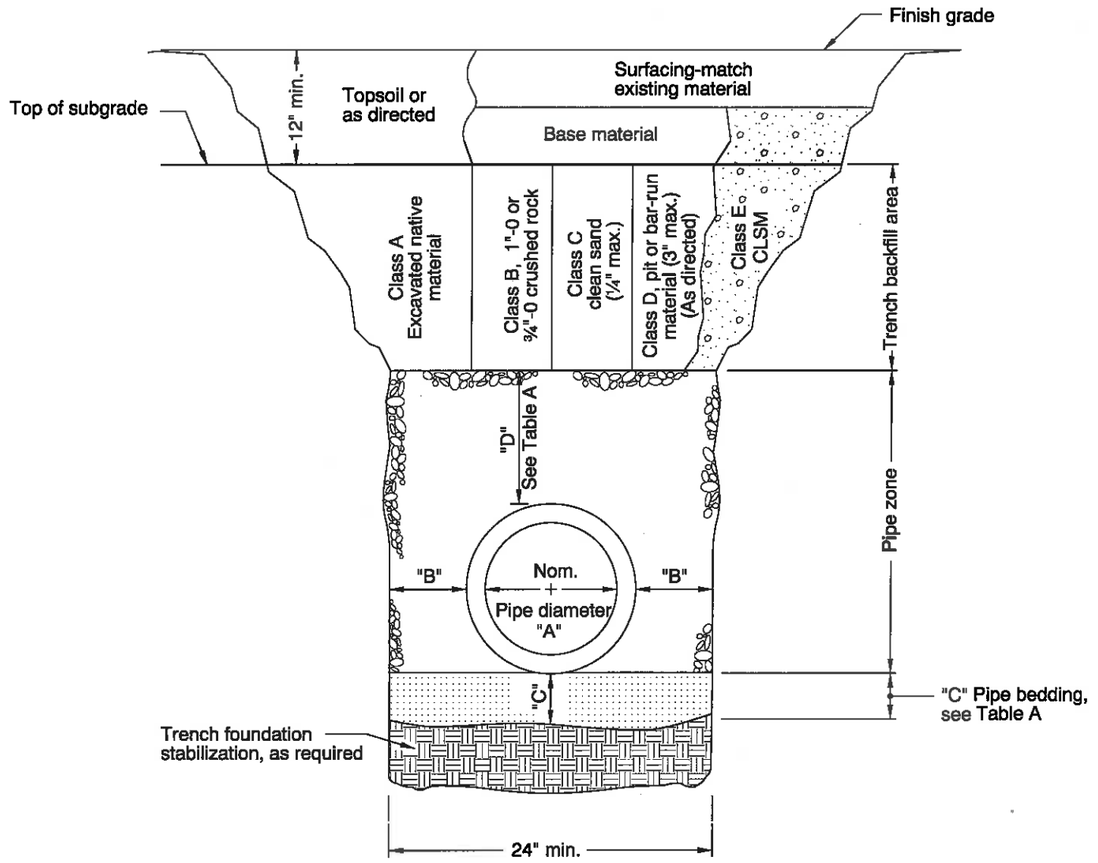
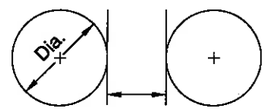


TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.

MULTIPLE INSTALLATIONS



DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS:

1. Surfacing of paved areas shall comply with street cut Std. Drg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Drg. RD336 for tracer wire details (When required).

CALC. BOOK NO. N/A

BASELINE REPORT DATE 18-DEC-2009

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

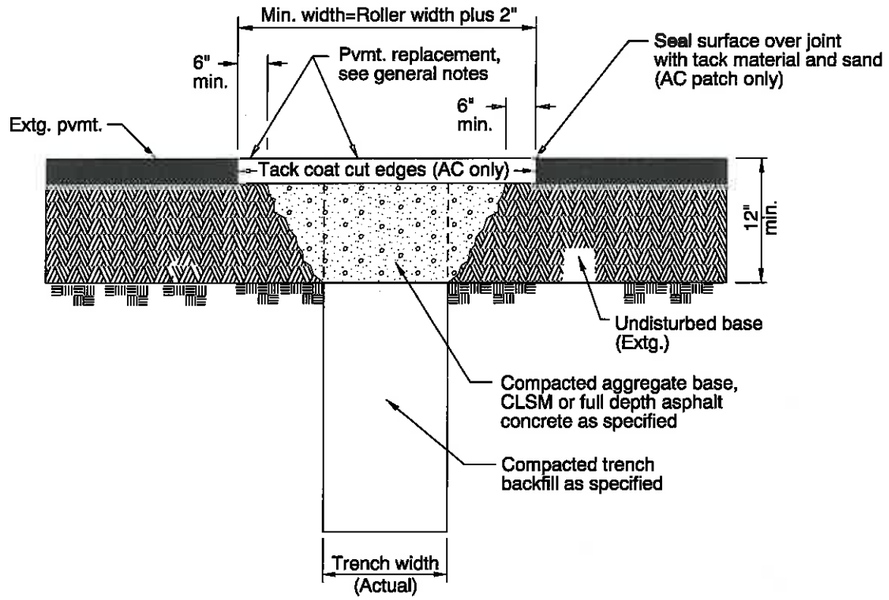
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2008

DATE	REVISION DESCRIPTION
06-2009	ADDED AND REVISED NOTES
12-2009	ADDED AND REVISED NOTES



GENERAL NOTES FOR ALL DETAILS:

1. All existing AC or PCC pavement shall be sawcut prior to repaving.
2. Concrete pavement shall be replaced with concrete to a minimum thickness of 6" or to the thickness of removed pavement, whichever is greater.
3. Place AC mix minimum thkn. of 4" or the thkn. of the removed pavement, whichever is greater. Compact as specified.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-JUN-2008

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

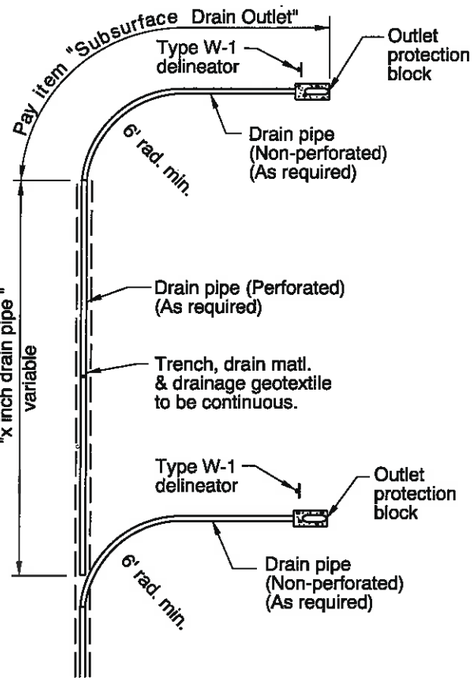
STREET CUT

2008

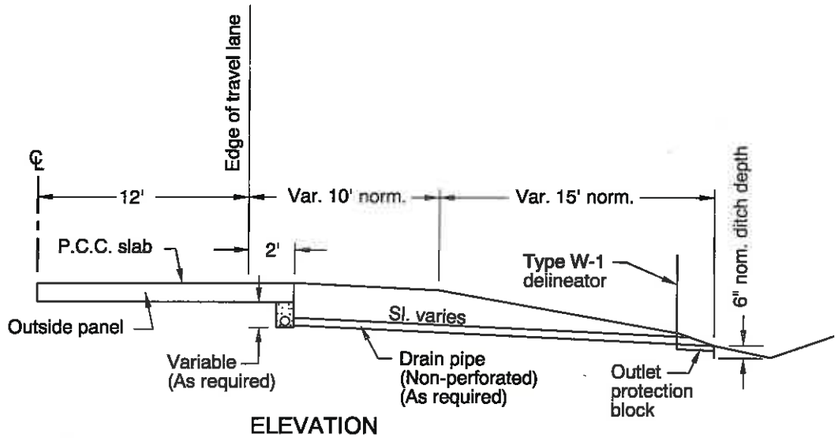
DATE	REVISION DESCRIPTION

rd302.dgn 31-DEC-2008

RD302

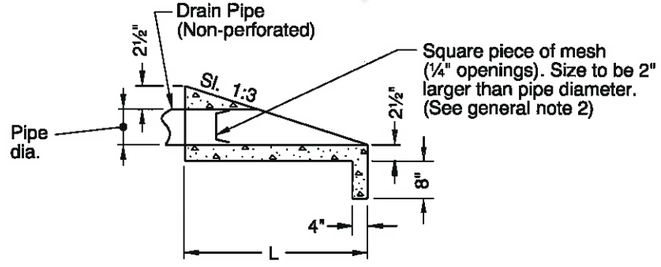


PLAN



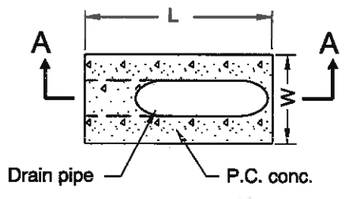
ELEVATION

SUBSURFACE DRAIN OUTLET



SECTION A-A

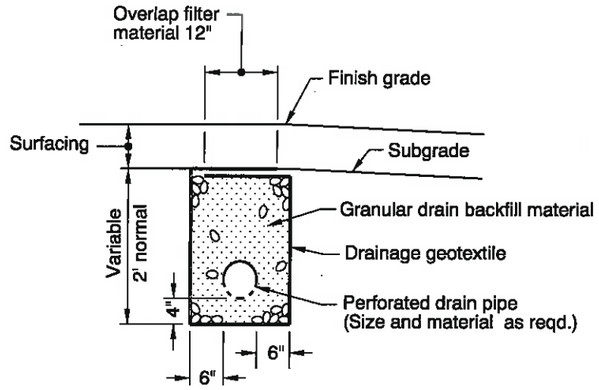
PIPE DIA. (in)	L NOM. (in)	W NOM. (in)
3	24	12
4	24	12
6	33	14
8	42	16



PLAN

OUTLET PROTECTION BLOCK

TYPE 1 SUBSURFACE DRAIN INSTALLATION



SECTION

SUBSURFACE DRAIN DETAIL

GENERAL NOTES FOR ALL DETAILS:

1. In guard rail areas extend outlet protection block to back of guard rail post min.
2. Mesh for rodent control to be galvanized wire or approved equal.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-DEC-2008

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

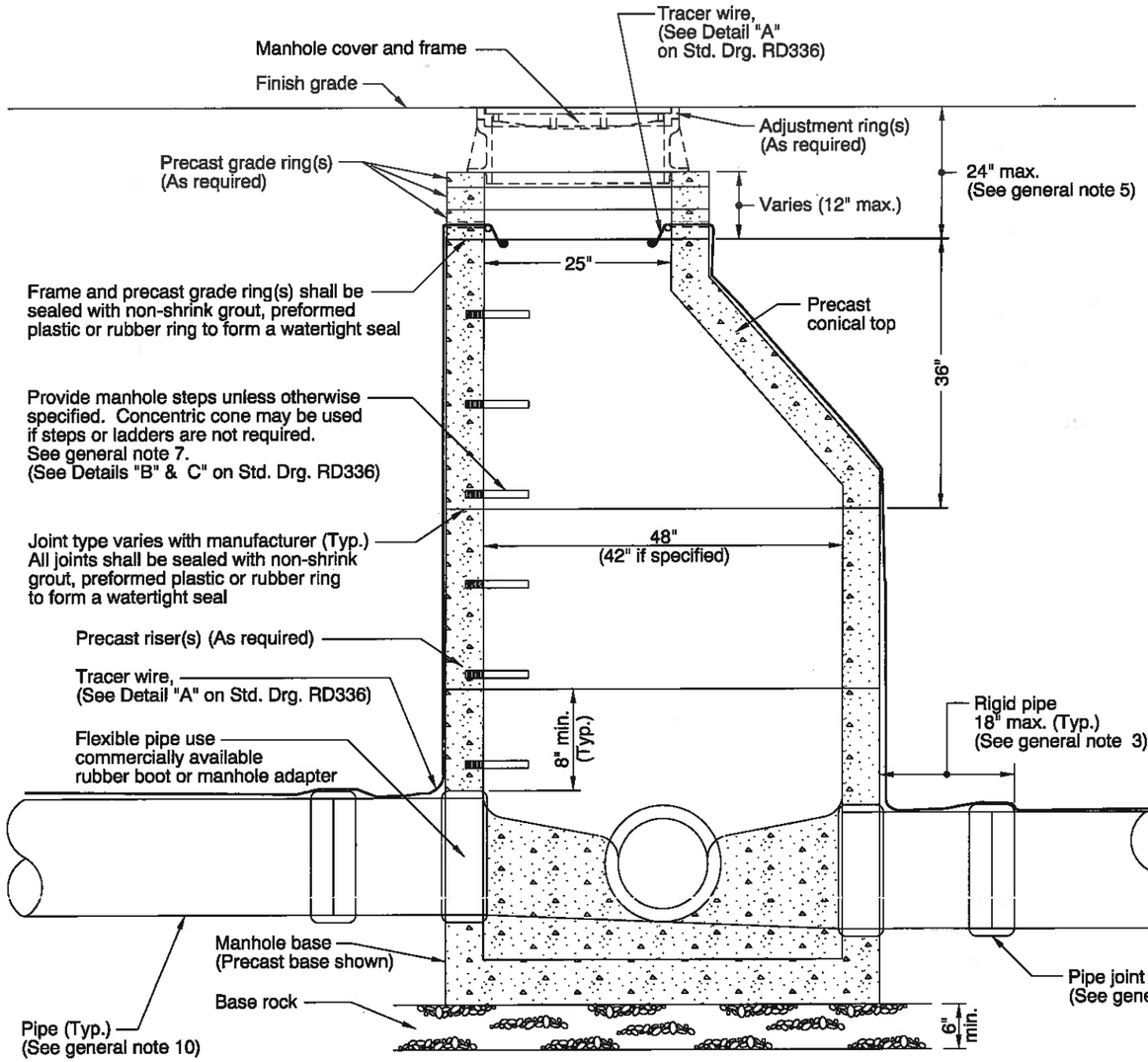
SUBSURFACE DRAIN

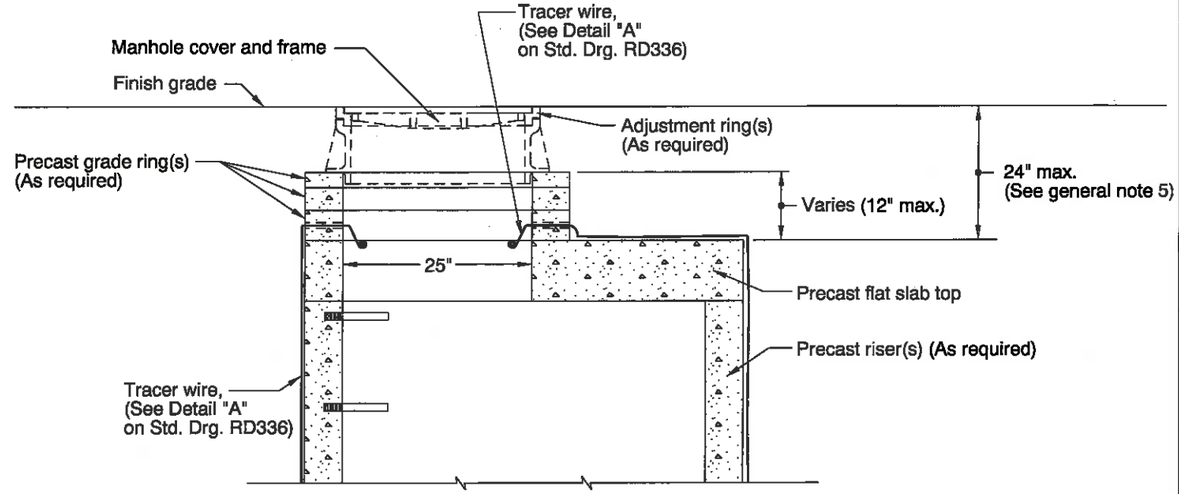
2008

DATE	REVISION DESCRIPTION

rd312.dgn 31-DEC-2008

RD312





GENERAL NOTES FOR ALL DETAILS:

1. All precast sections shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. When rigid pipe is used the connecting pipe shall have a flexible, gasketted and unrestrained joint within 18" of manhole wall. Joint type varies with manufacturer.
4. See Std. Drg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate.
7. Ladder with notched safety rail and removable extension is reqd. for manholes with depths between 24'-0" and 50'-0".
8. See Std. Drg. RD336 for details not shown.
9. See Std. Drg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Drg. RD342 for shallow manholes.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

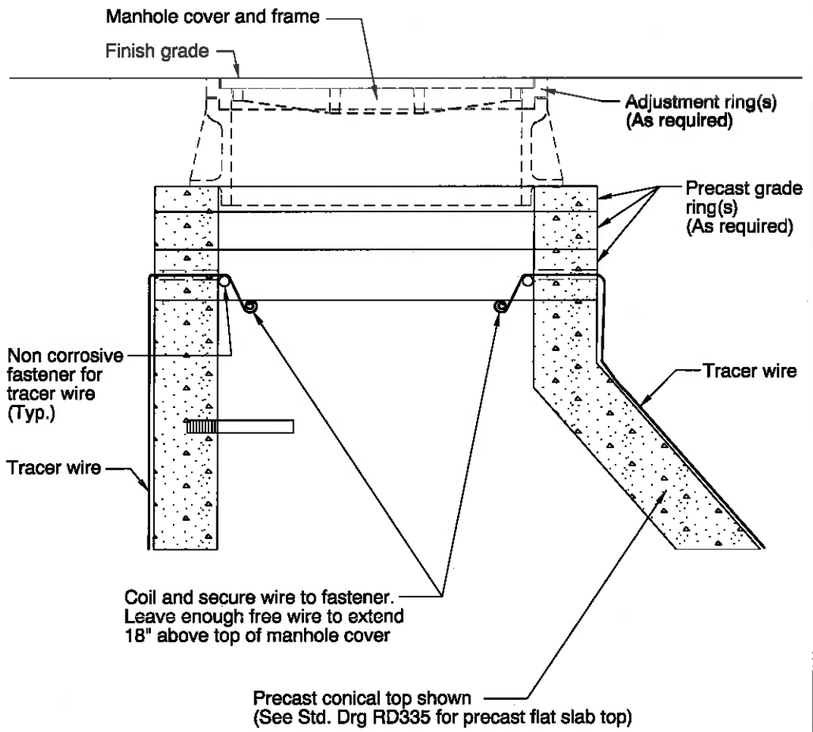
STANDARD
STORM SEWER MANHOLE

2008

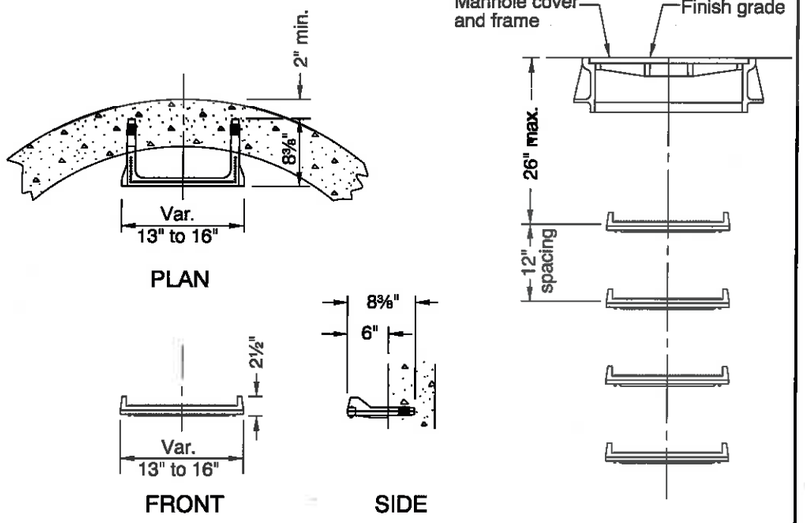
DATE	REVISION DESCRIPTION
07-2013	REVISED NOTES

rd335.dgn 08-JUL-2013

RD335

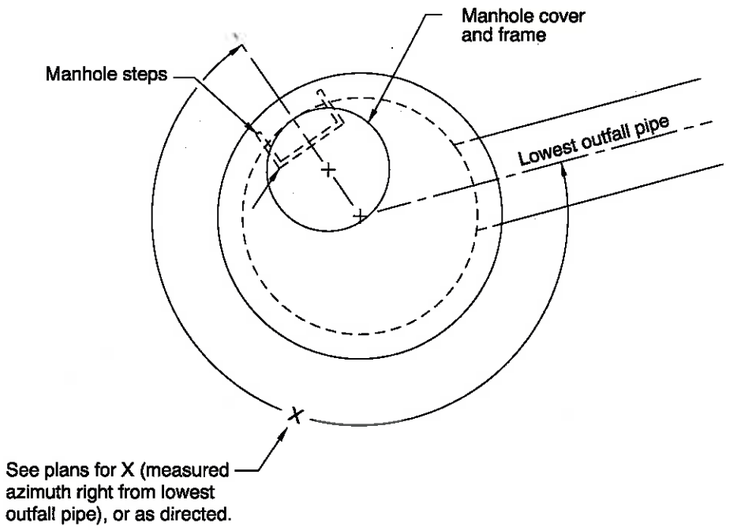


DETAIL "A"
TRACER WIRE
(See general note 6)



See ODOT's QPL for acceptable alternate manhole steps and/or ladders.
NOTE: No conflict with pipe align with available shelf.

DETAIL "B"
MANHOLE STEPS
(See general note 7)



PLAN

DETAIL "C"
PRECAST CONICAL TOP
OR
PRECAST FLAT SLAB TOP
AND MANHOLE STEPS ORIENTATION
(See general note 7)

GENERAL NOTES FOR ALL DETAILS:

1. All precast sections shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. When rigid pipe is used the connecting pipe shall have a flexible, gasketted and unrestrained joint within 18" of manhole wall. Joint type varies with manufacturer.
4. See Std. Drg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate.
7. Ladder with notched safety rail and removable extension is reqd. for manholes with depths between 24'-0" and 50'-0".
8. See Std. Drg. RD335 for details not shown.
9. See Std. Drg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Drg. RD342 for shallow manholes.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

STANDARD
STORM SEWER MANHOLE

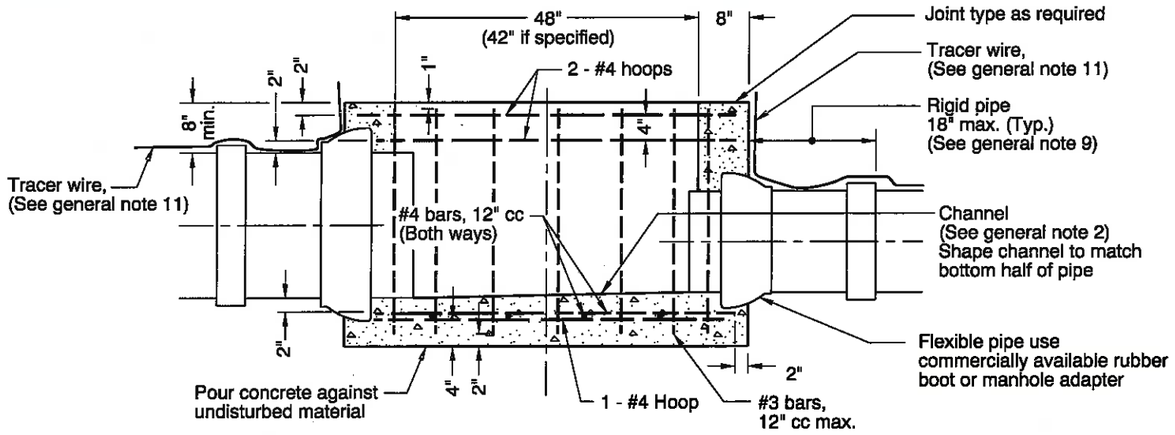
2008

DATE	REVISION DESCRIPTION
05-2009	REVISED & ADDED NOTES
01-2011	REVISED & ADDED NOTES
07-2012	REVISED DETAILS, REVISED & ADDED NOTES
07-2013	REVISED NOTE

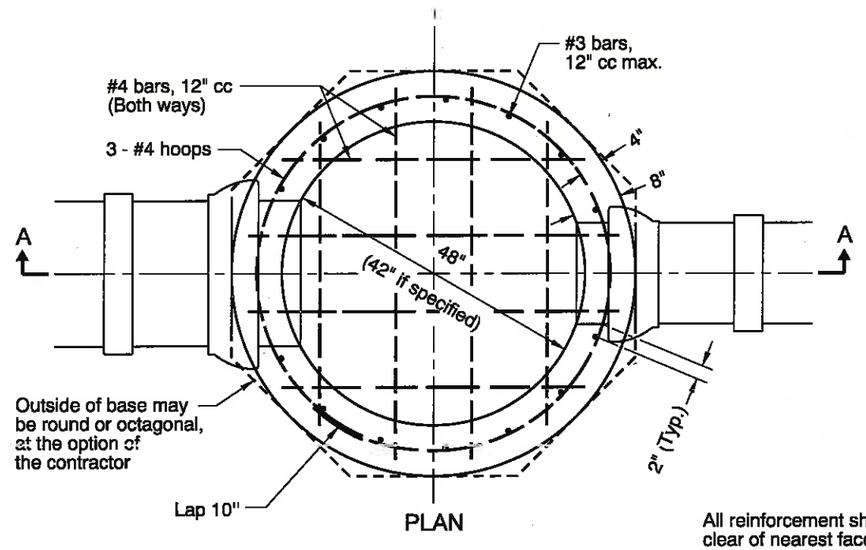
08-JUL-2013 rd336.dgn

RD336

Effective Date: December 1, 2013 - May 31, 2014



SECTION A-A

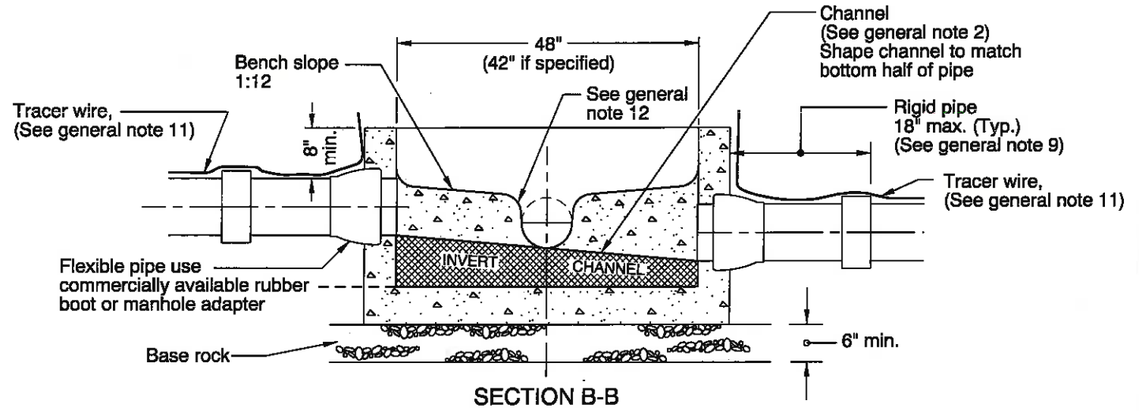


PLAN

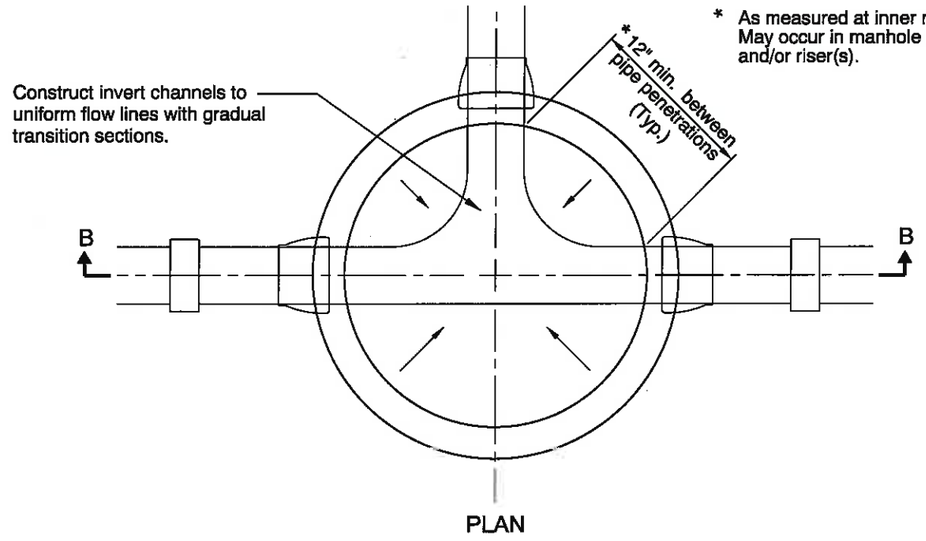
All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.

CAST IN PLACE MANHOLE BASE

(For invert channel details, see precast option at right)



SECTION B-B



PLAN

* As measured at inner manhole wall. May occur in manhole base section and/or riser(s).

PRECAST MANHOLE BASE

GENERAL NOTES FOR ALL DETAILS:

1. All concrete shall be commercial grade concrete.
2. Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
3. Bases may be precast or cast in place.
4. Max. pipe diameter varies with pipe material.
5. Use on 42" and 48" diameter manhole.
6. Extend pipe into manhole and grout smooth. Pipe(s) may extend 2" max. beyond the interior manhole wall.
7. Location, elevation, and number of pipe(s) varies.
8. All precast sections shall conform to the requirements of ASTM C478.
9. When rigid pipe is used the connecting pipe shall have a flexible, gasketted and unrestrained joint within 18" of manhole wall. Joint type varies with manufacturer.
10. See Std. Drg. RD336 for manhole steps details.
11. See Std. Drg. RD336 for tracer wire details.
12. At spring line of pipe, extend channel up to crown line on 12:1 batter.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

STANDARD MANHOLE BASE SECTION

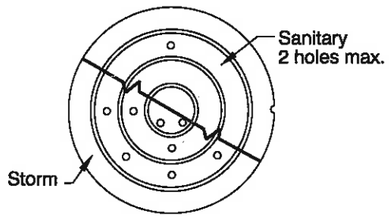
2008

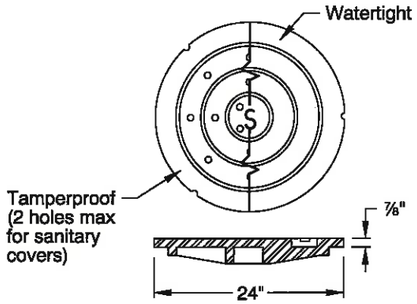
DATE	REVISION DESCRIPTION
07-2010	REVISED NOTES
07-2012	REVISED DETAILS & NOTES
07-2013	REVISED NOTES

rd344.dgn 08-JUL-2013

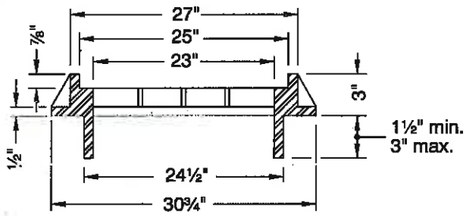
RD344

Effective Date: December 1, 2013 - May 31, 2014



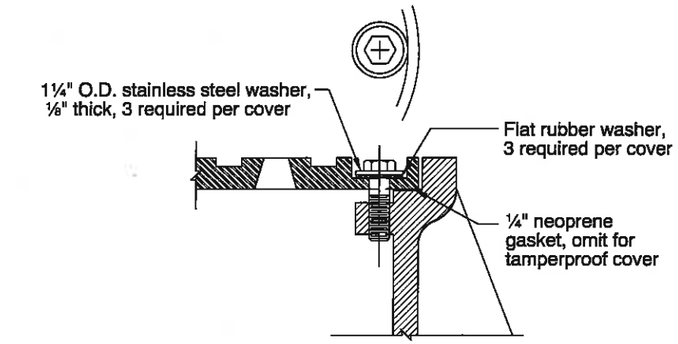


Cast iron tamperproof & watertight
(Frames available in standard or suburban pattern)



CAST IRON SUBURBAN FRAME
For use on local streets only, as specified

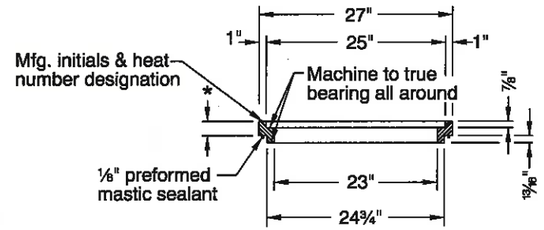
SUBURBAN MANHOLE COVER & FRAME



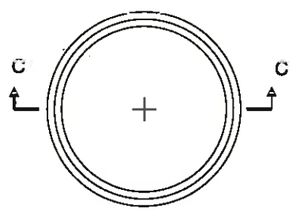
NOTE:
3 reqd., equally spaced, ½" x 1½" pentagonal or hexagonal head, bronze or stainless steel. Install frame so that one bolt boss is located over the manhole ladder.

BOLT-DOWN DETAIL
(FOR TAMPERPROOF AND WATERTIGHT)

* Std. depths 1½", 2", 2½" & 3"
Matl. to be grey cast iron ASTM A 48, Class 35B. Tolerance on non-machined surfaces to be ±0.06", see general note 6

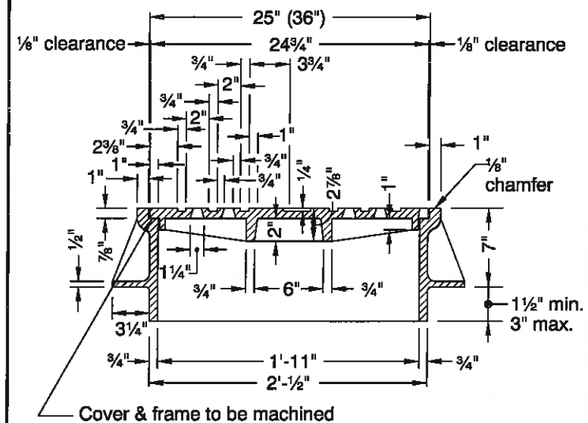


SECTION C-C



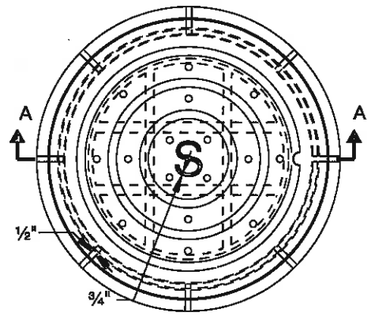
MANHOLE ADJUSTMENT RING
For use with Standard Manhole Frame

STANDARD MANHOLE COVER, FRAME & GRATE



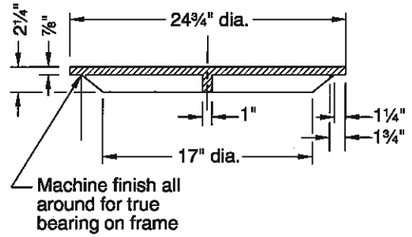
SECTION A-A

36" min. diameter cover is reqd. for manholes with depths of 20' or greater. (See general note 4)

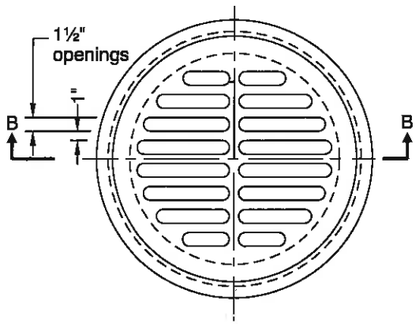


NOTE:
Coat outside of frame with asphalt, where frame is to be placed in conc. pvmt., conc. gutter, or walk.

PLAN
MANHOLE COVER & FRAME



SECTION B-B



For use with Standard Manhole Frame
(See general note 7)

PLAN
MANHOLE GRATE

GENERAL NOTES FOR ALL DETAILS:

1. Tamperproof covers reqd. on sanitary or storm drain manhole where located in pedestrian ways or easement areas. Covers for sanitary manholes shall have 2 holes maximum.
2. Watertight covers required if located where cover may be submerged (no holes).
3. Covers and frames shall be stamped with manufacturer's initials, heat number and point of origin.
4. Ladder with notched safety rail and removable extension is reqd. for manholes with depths between 24'-0" and 50'-0".
5. See Std. Drg. RD360 for manhole frame adjustment.
6. See ODOT's QPL for alternate manhole adjustment rings.
7. Manhole grate allowed only in locations not subject to bicycle or pedestrian use.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

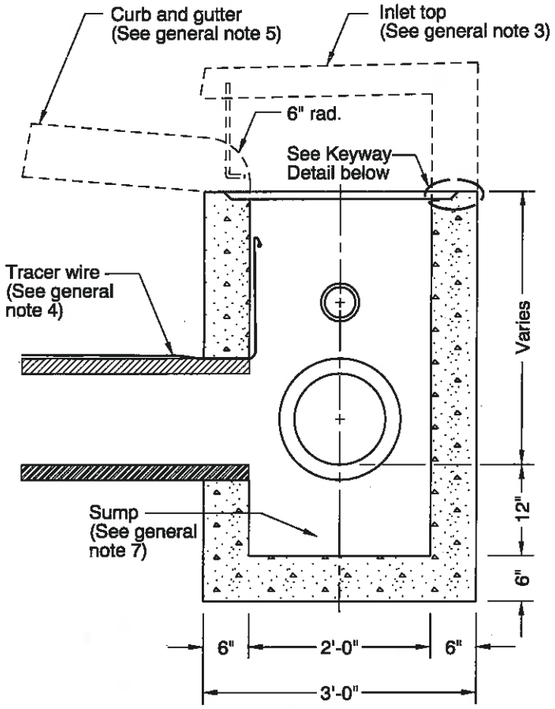
MANHOLE COVERS AND FRAMES

2008

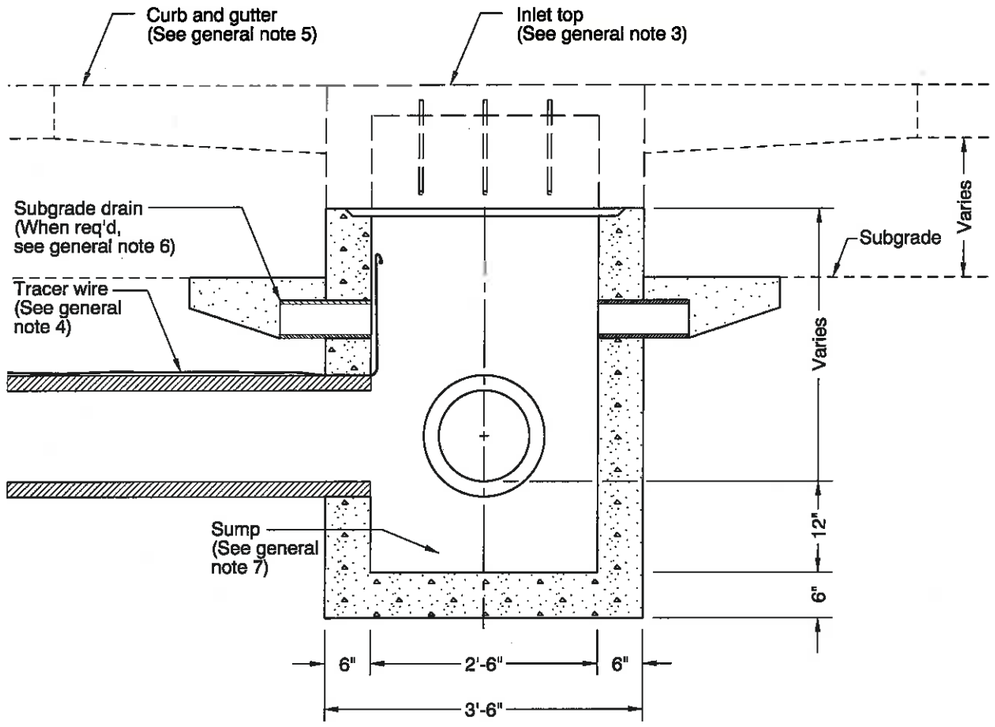
DATE	REVISION DESCRIPTION
01-2011	REVISED DETAILS & ADDED NOTES
07-2013	REVISED DETAILS & NOTES

rd356.dgn 08-JUL-2013

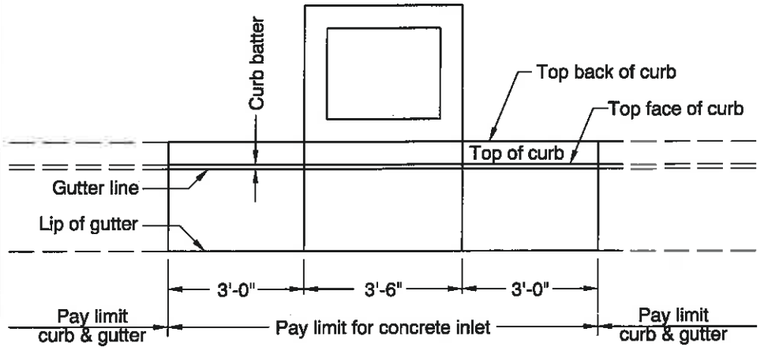
RD356



SECTION B - B



SECTION A - A

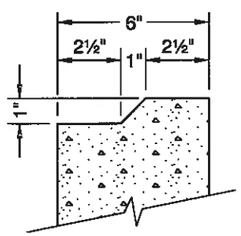


PLAN

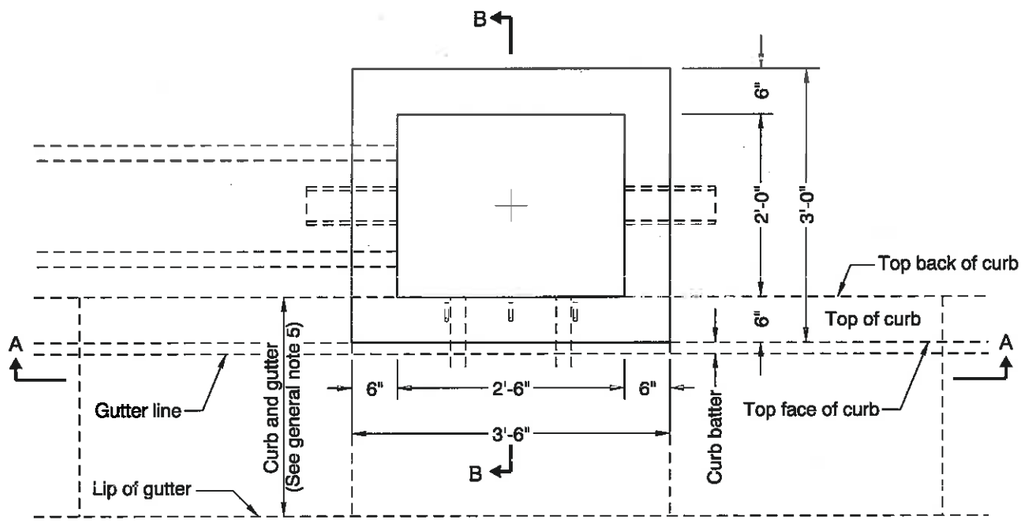
PAY LIMIT

GENERAL NOTES FOR ALL DETAILS:

1. All concrete shall be commercial grade concrete.
2. Inlet base may be cast-in-place or precast. Where precast inlet base is used as an alternate, a 4" compacted leveling bed of sand or ¼"-0 crushed aggregate shall be provided.
3. See Std. Drgs. RD372 & RD373 for inlet top details.
4. See Std. Drg. RD336 for tracer wire details, or approved alternate.
5. See Std. Drgs. RD700 & RD701 for curb and gutter details.
6. See Std. Drg. RD364 for subgrade drain details.
7. Provide sump only where shown on plans, and allowed by jurisdiction. For sump details, see Std. Drg. RD364.
8. Location, elevation, and number of pipe(s) varies.
9. Max. pipe diameter varies with pipe material.



KEYWAY DETAIL



PLAN

CALC. BOOK NO. N/A

BASELINE REPORT DATE 23-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

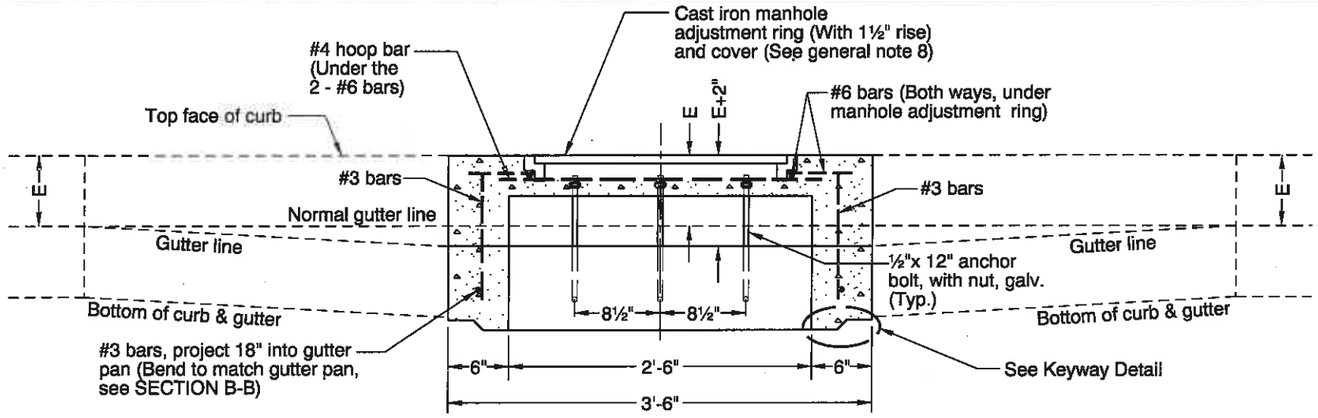
CONCRETE INLET BASE
TYPE CG-3

2008

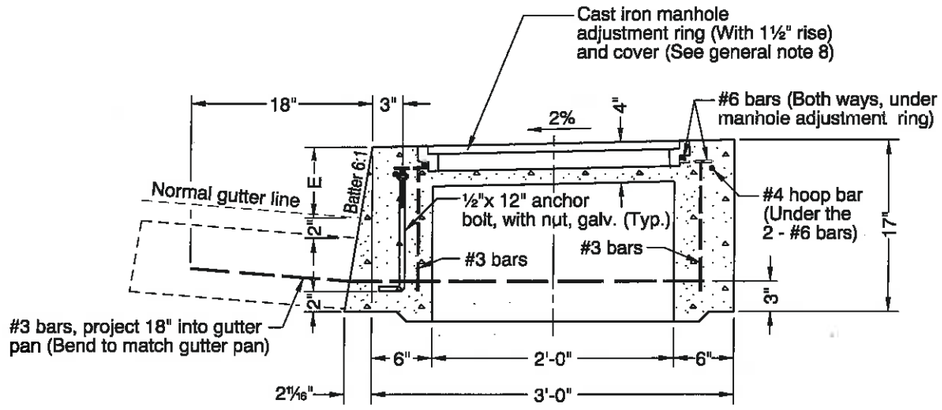
DATE	REVISION DESCRIPTION
06-2009	REVISED & ADDED NOTES
07-2010	REVISED DETAIL
07-2012	ADDED NOTE

rd371.dgn 23-JUL-2012

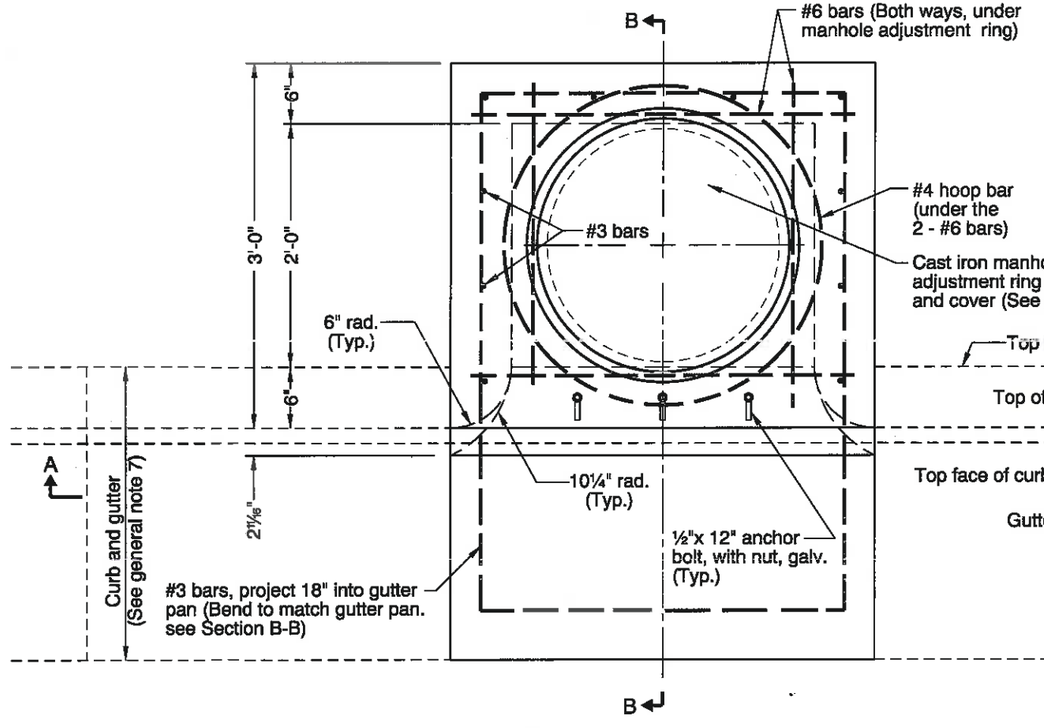
RD371



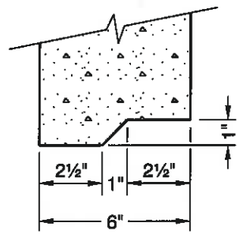
SECTION A - A



SECTION B - B



PLAN



KEYWAY DETAIL

GENERAL NOTES FOR ALL DETAILS:

1. All concrete shall be commercial grade concrete.
2. Inlet top may be cast-in-place or precast.
3. All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.
4. Vary anchor bolt length and reinforcing bar placement as required by curb exposure E (see note 7 below).
5. See Std. Drg. RD371 for inlet base details.
6. See Std. Drg. RD371 for inlet pay limit.
7. See Std. Drgs. RD700 & RD701 for curb and gutter details.
8. See Std. Drg. RD356 for cast iron manhole adjustment ring and cover.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 30-JUN-2009

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CONCRETE INLET TOP, OPTION 1 TYPE CG-3

2008

DATE	REVISION DESCRIPTION
06-2009	REVISED NOTE

rd372.dgn 30-JUN-2009

RD372

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	2.0	40	ASTM D 3034 SDR35 (46 psi stiffness)
6	2.0	40	
8	2.0	40	
10	2.0	40	
12	2.0	40	
15	2.0	40	
18	2.0	40	ASTM F 679 (46 psi stiffness)
21	2.0	40	
24	2.0	40	
27	2.0	40	
30	2.0	40	
33	2.0	40	
36	2.0	40	
42	2.0	40	
48	2.0	40	

PIPE	PROFILE WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	2.0	40	ASTM F 794 Series 46 (46 psi stiffness)
6	2.0	40	
8	2.0	40	
10	2.0	40	
12	2.0	40	
15	2.0	40	
18	2.0	40	
21	2.0	40	
24	2.0	40	
27	2.0	40	
30	2.0	40	
33	2.0	40	
36	2.0	40	
39	2.0	40	
42	2.0	40	
45	2.0	40	
48	2.0	40	

GENERAL NOTES FOR ALL TABLES:

1. Maximum height of cover is greatest vertical distance from top of pipe to finish grade.
2. Minimum height of cover is least vertical distance from top of pipe to subgrade.
3. For ODOT, pipes with maximum cover greater than those shown in the Tables shall be approved by the Senior Standards Engineer.
4. For multiple pipe installations, see Std. Drg. RD300.
5. Open ends of pipes normally require a site specific design, and may require special treatment (sloped ends, culvert embankment protection, paved end slopes, safety end sections, or other measures).
   See special details or Standard Drawings as called for on plans.

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	2.0	41	AWWA C905 DR 32.5 (57 psi stiffness)
16	2.0	41	
18	2.0	41	
20	2.0	41	
24	2.0	41	
30	2.0	41	
36	2.0	41	
42	2.0	41	
48	2.0	41	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	1.0	46	AWWA C905 DR 26 (115 psi stiffness)
16	1.0	46	
18	1.0	46	
20	1.0	46	
24	1.0	46	
30	1.0	46	
36	1.0	46	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	1.0	48	AWWA C905 DR 25 (129 psi stiffness)
16	1.0	48	
18	1.0	48	
20	1.0	48	
24	1.0	48	
30	1.0	48	
36	1.0	48	
42	1.0	48	
48	1.0	48	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
14	1.0	61	AWWA C905 DR 21 (224 psi stiffness)
16	1.0	61	
18	1.0	61	
20	1.0	61	
24	1.0	61	
30	1.0	61	
36	1.0	61	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	1.0	48	AWWA C900 DR 25 (129 psi stiffness)
6	1.0	48	
8	1.0	48	
10	1.0	48	
12	1.0	48	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	1.0	69	AWWA C900 DR 18 (364 psi stiffness)
6	1.0	69	
8	1.0	69	
10	1.0	69	
12	1.0	69	

PIPE	SOLID WALL PVC		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
4	1.0	109	AWWA C900 DR 14 (814 psi stiffness)
6	1.0	109	
8	1.0	109	
10	1.0	109	
12	1.0	109	

CALC. BOOK NO. RD11-02

BASELINE REPORT DATE 13-JUN-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

FILL HEIGHT TABLES FOR PVC PIPE

2008

DATE	REVISION DESCRIPTION
12-2009	REVISED DETAILS & NOTES
07-2011	REMOVED DETAILS & ADDED TABLES

rd388.dgn 15-JUL-2011

RD388

PIPE	DUAL WALL POLYPROPYLENE		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
12	1.0	28	ASTM F 2736
15	1.0	30	
18	1.0	26	
24	1.0	22	
30	1.0	22	

PIPE	TRIPLE WALL POLYPROPYLENE		
DIAMETER (Inches)	MINIMUM COVER (Feet)	MAXIMUM COVER (Feet)	REMARKS
30	1.0	22	ASTM F 2764
36	1.0	19	
48	1.0	16	
60	2.0	22	

GENERAL NOTES FOR ALL TABLES:

1. Maximum height of cover is greatest vertical distance from top of pipe to finish grade.
2. Minimum height of cover is least vertical distance from top of pipe to subgrade.
3. For ODOT, pipes with maximum cover greater than those shown in the Tables shall be approved by the Senior Standards Engineer.
4. For multiple pipe installations, see Std. Drg. RD300.
5. Heavy solid line denotes boundary between minimum cover requirements.
6. Open ends of pipes normally require a site specific design, and may require special treatment (sloped ends, culvert embankment protection, paved end slopes, safety end sections, or other measures).
   See special details or Standard Drawings as called for on plans.

CALC. BOOK NO. RD11-01

BASELINE REPORT DATE 09-JUN-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

FILL HEIGHT TABLES FOR POLYPROPYLENE PIPE

2008

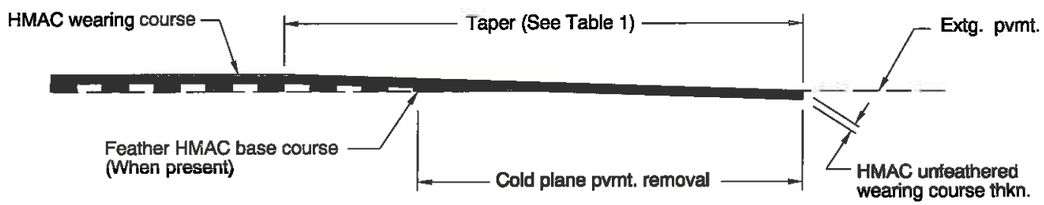
DATE	REVISION DESCRIPTION

rd393.dgn 15-JUL-2011

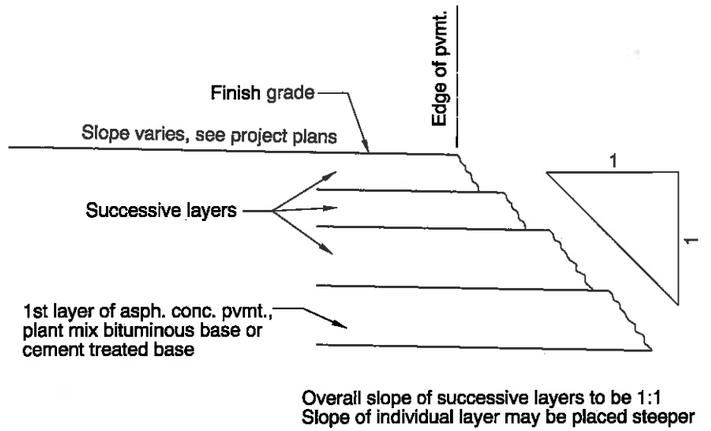
RD393

TABLE 1

TAPER LENGTHS	
Posted Speed	Taper Length
< 45 mph	1" per 50'
≥ 45 mph	1" per 100'

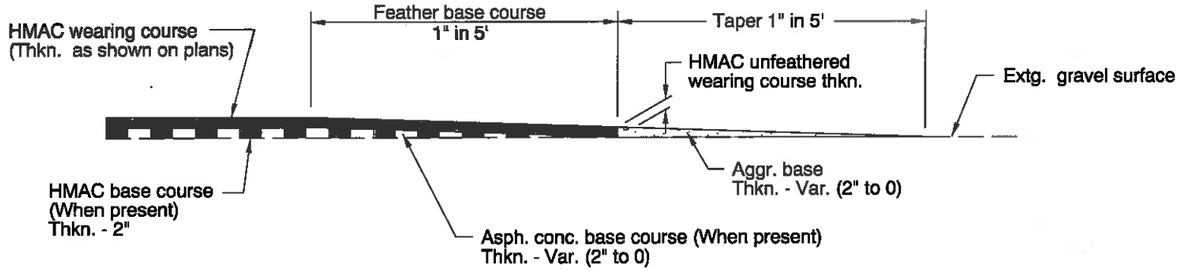


AC PAVEMENT MATCH AT PROJECT ENDS OR BRIDGE ENDS WHEN NOT OVERLAYING THE BRIDGE

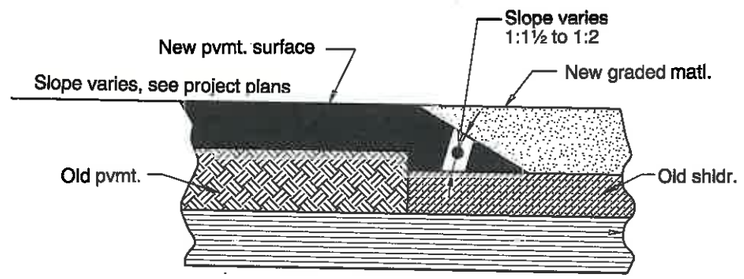


Overall slope of successive layers to be 1:1
Slope of individual layer may be placed steeper

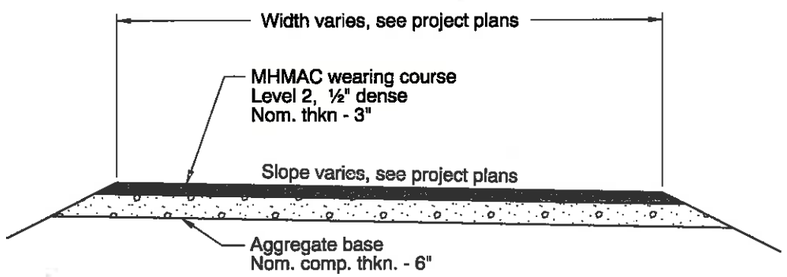
MULTI-LAYER PAVEMENT CONSTRUCTION



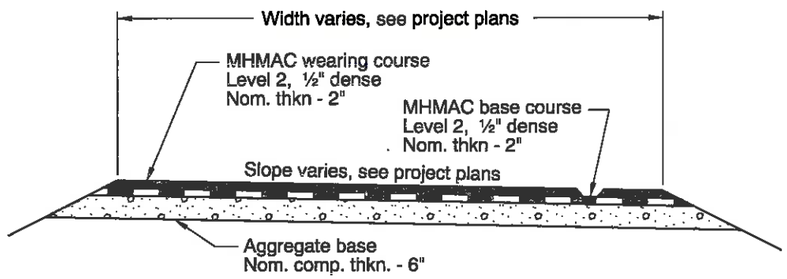
METHOD OF FEATHERING AC PAVEMENT AT GRAVEL APPROACHES



SAFETY EDGE



INACCESSIBLE TO MAINTENANCE VEHICLES



ACCESSIBLE TO MAINTENANCE VEHICLES

SHARED USE PATH

CALC. BOOK NO. N/A

BASELINE REPORT DATE 23-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

ASPHALT PAVEMENT DETAILS

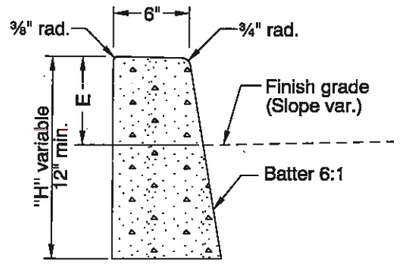
2008

DATE	REVISION DESCRIPTION
07-2011	REVISED NOTES ADDED TABLE AND DETAIL
01-2012	REVISED DETAILS & NOTES
07-2012	REVISED NOTE

23-JUL-2012

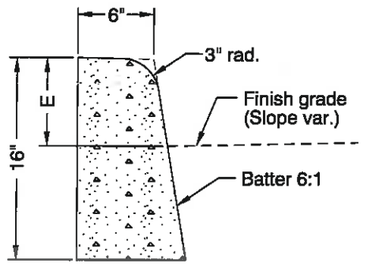
rd610.dgn

RD610

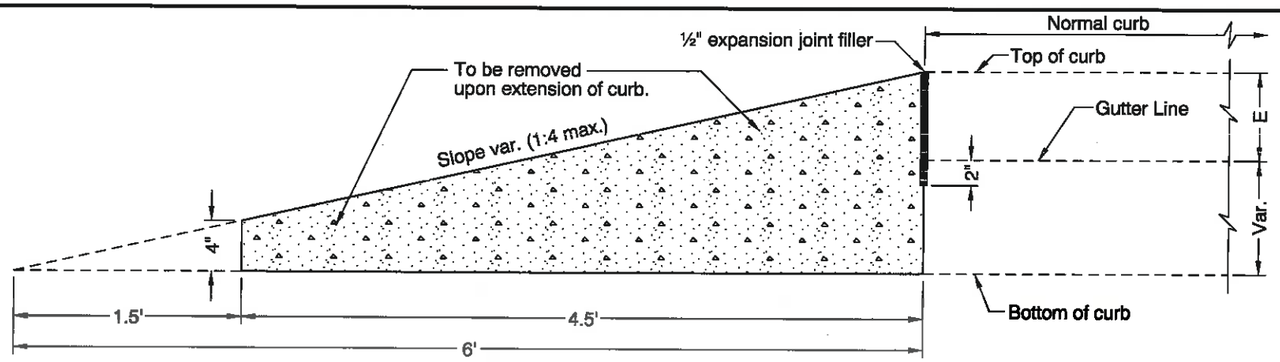


O.D.O.T. & City of Portland Standard "H"=16"

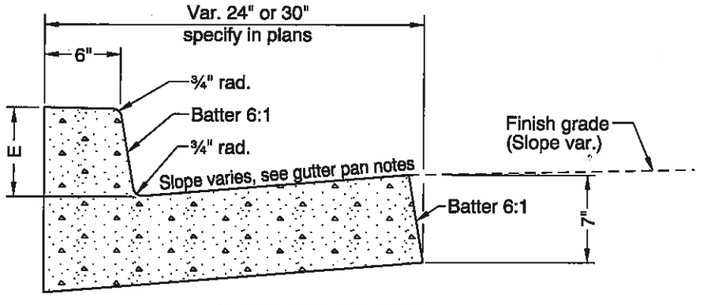
STANDARD CURB



MOUNTABLE CURB

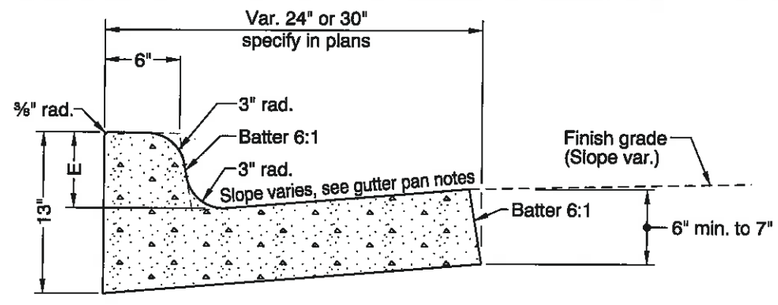


CURB ENDING DETAIL

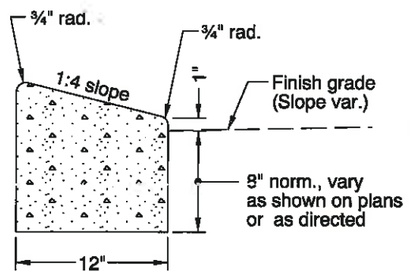


CURB AND GUTTER

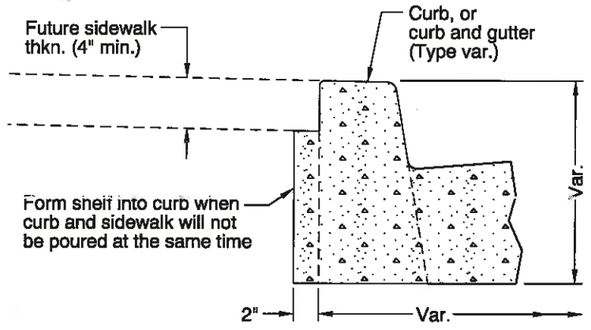
GUTTER PAN NOTES:
Slope 8% normal.
Use 5% slope for gutter width greater than 24".
Slope 4% at ramps. Vary slope as reqd. for drainage.
Vary where shown on plans, and allowed by jurisdiction.



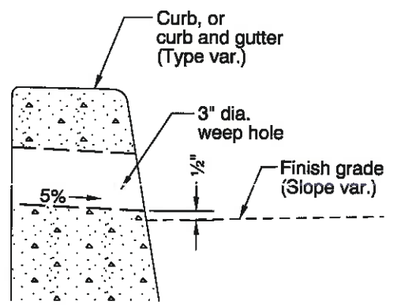
MOUNTABLE CURB AND GUTTER



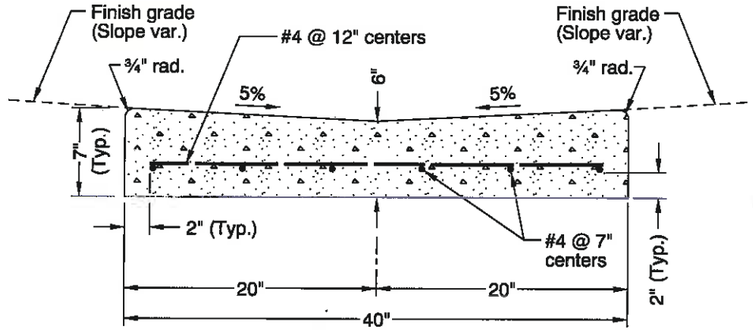
LOW PROFILE
MOUNTABLE CURB



MODIFICATION FOR KEYWAY
(Where shown on plans)



WEEP HOLE DETAIL
(Where shown on plans, and allowed by jurisdiction)



VALLEY GUTTER

GENERAL NOTES FOR ALL DETAILS:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. contraction joints at 15' maximum spacing, and at ends of each inlet and ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" Is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 2% normal, unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Drg. RD720.
9. For drainage curbs, see Std. Drg. RD701.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 07-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CURBS

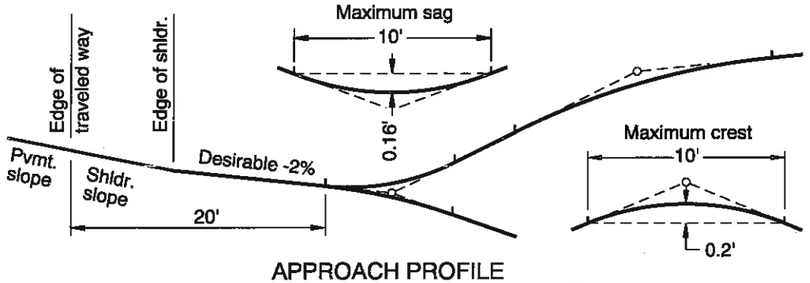
2008

DATE	REVISION DESCRIPTION
07-2009	REVISED DETAILS & NOTES
01-2013	REVISED DETAILS & NOTES

rd700.dgn 29-JAN-2013

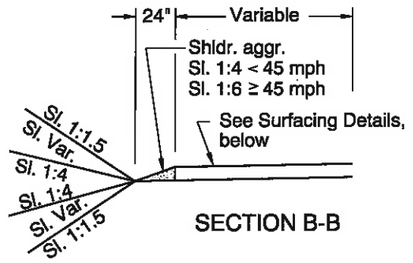
RD700

Effective Date: December 1, 2013 - May 31, 2014



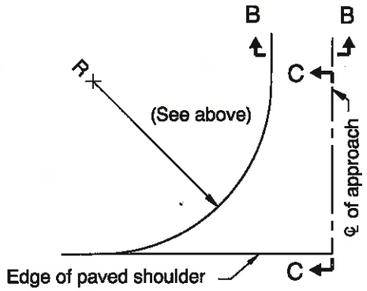
APPROACH PROFILE

NOTE:
When grades on approaches meet without vertical curves the maximum algebraic difference on crests should be 8% and on sags 12%. Grades steeper than 15% should not be used without prior approval of the engineer of record. Any driveways with slopes exceeding 12% shall be paved.

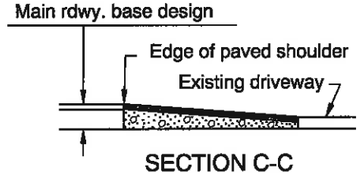


SECTION B-B

R= { 30' normal (Major constr.)
20' normal (Minor constr.)



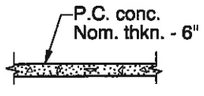
HALF PLAN



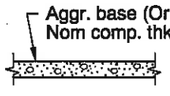
SECTION C-C

NOTE:
Normal paving limits to extend 20' (30' for public road connections) from the edge of pavement or to the right of way line, whichever is less. Approach surfacing and width to then match existing approach.

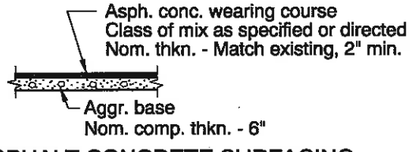
APPROACH



P.C. CONCRETE SURFACING



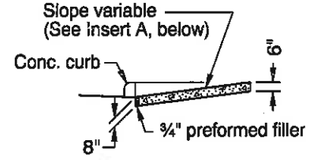
GRAVEL SURFACING



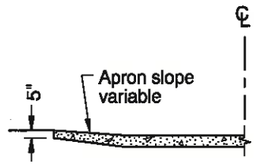
ASPHALT CONCRETE SURFACING

APPROACH AND DRIVEWAY CONNECTION SURFACING DETAILS

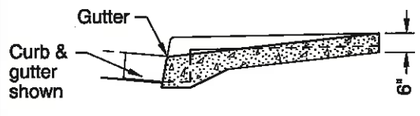
TYPE A
PORTLAND CEMENT CONCRETE



SECTION D-D

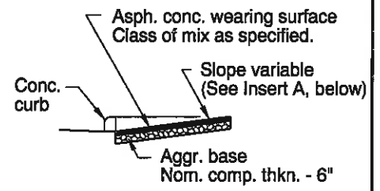


SECTION E-E

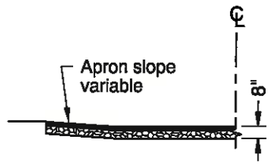


SECTION A-A
FOR MONOLITHIC DRIVEWAYS

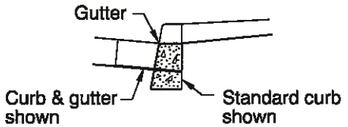
TYPE A-1
ASPHALT CONCRETE



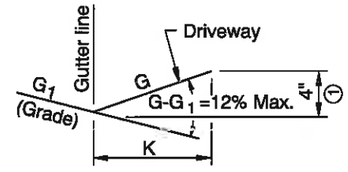
SECTION D-D



SECTION E-E

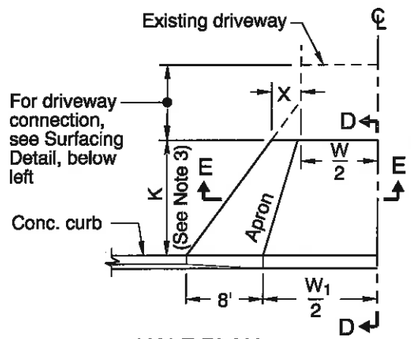


SECTION A-A
FOR DRIVEWAYS

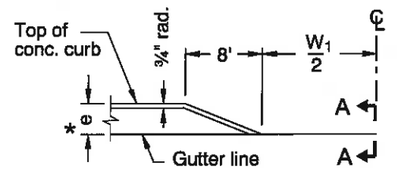


INSERT A

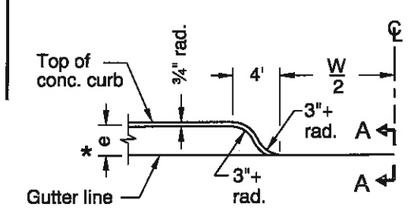
① Minimum allowable for drainage control on negatively sloped driveways.



HALF PLAN



HALF ELEVATION



HALF ELEVATION
(ALTERNATE APRON SLOPE)
(See General Note 5)

* Curb exposure "e" = 7" normal. Vary as shown on plans or as directed.

TABLE A

W (ft)	X (ft)	K (ft) 5	6	8	10
		W1 (ft)			
12	3	15	15	15	15
14		17	17	17	17
16		19	19	19	19
18		21	21	21	21
20		23	23	23	23
22	4	27	28	29	30
24		29	30	31	32
26		31	32	33	34
28		33	34	35	36
30		35	36	37	38
32	5	41	42	44	46
34		43	44	46	48
36		45	46	48	50

Where a travel lane is constructed adjacent to the curb line, use 16' W min. for residence and 30' W min. for light commercial, add 5' to W_1 for both. Do not add the 5' to W_1 when 4' min. shldr. or bikeway is included in the typical.

NON-SIDEWALK DRIVEWAYS

NOTE: See "Table A" for dimensions not shown.

GENERAL NOTES FOR ALL DETAILS:

1. Driveway details shown on this drawing are to be used on roadways where there are no existing or planned sidewalks in driveway vicinity. For driveways located in a sidewalk see Std. Drgs. RD720, RD725 and/or RD730, RD735, RD740, RD745, RD750.
2. Width of driveway (W) as shown on plans or as directed.
3. K is the distance from back of curb to back of driveway (10' max.).
4. Where existing driveway is in good condition, construct only as much as required for satisfactory connection with new work.
5. "Alternate Apron Slope" used only where plans designate. Alternate Apron Slope may also be used at local jurisdiction's request when approved by the Project Manager.
6. Increase thickness of asphalt concrete and stone base where shown on plans.
7. For curb details, see Std. Drgs. RD700 & RD701.
8. For expansion and contraction joint requirements, see applicable curb and sidewalk standard drawings.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 11-DEC-2009

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

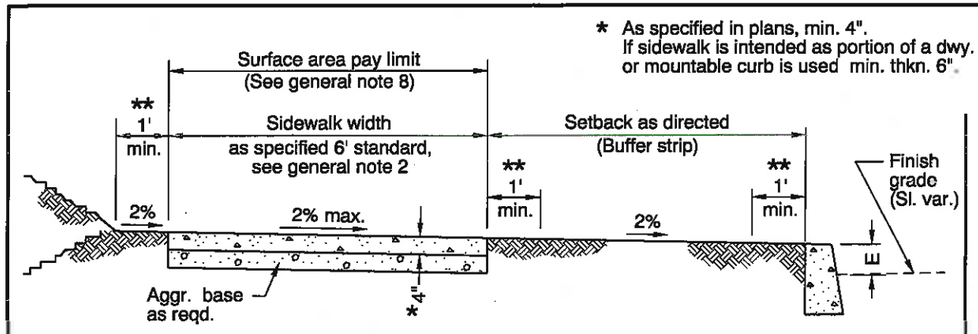
APPROACHES AND NON-SIDEWALK DRIVEWAYS

2008

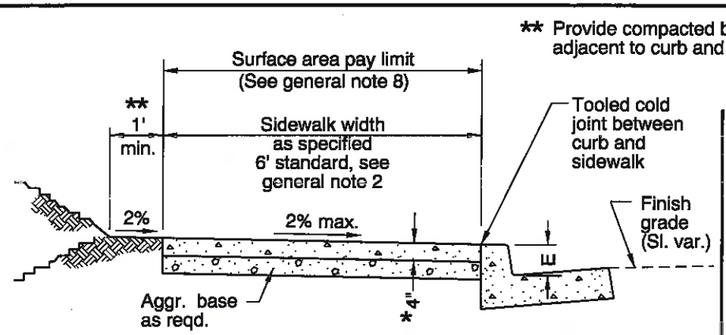
DATE	REVISION DESCRIPTION
06-2009	REVISED NOTE
12-2009	REVISED NOTES

rd715.dgn 31-DEC-2009

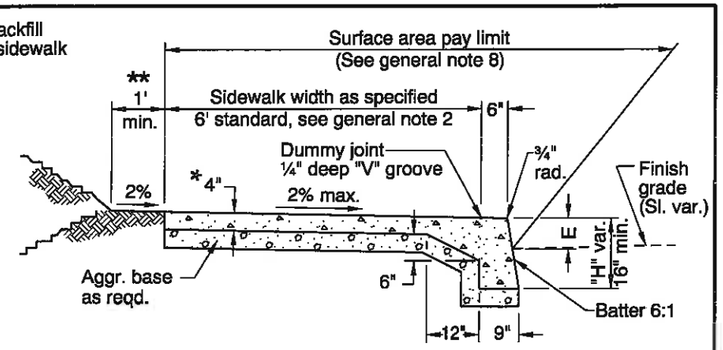
RD715



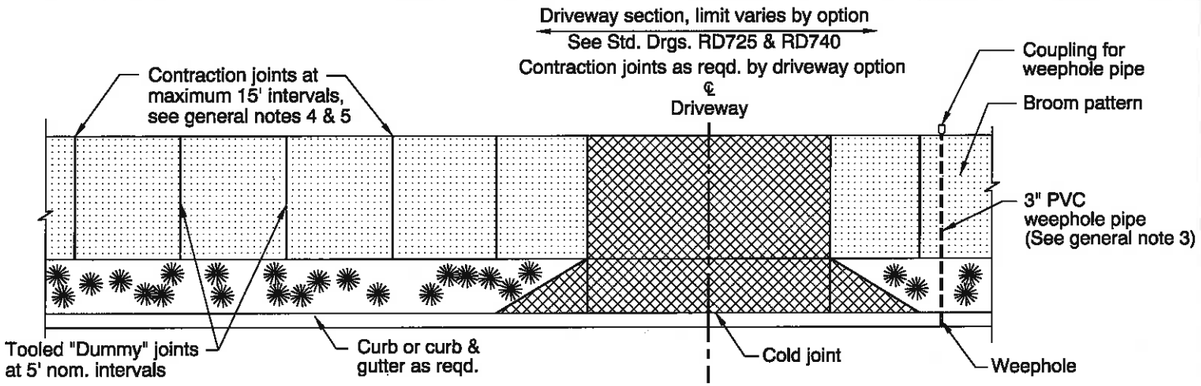
TYPICAL SETBACK SIDEWALK CROSS SECTION
E = curb exposure, see general note 6



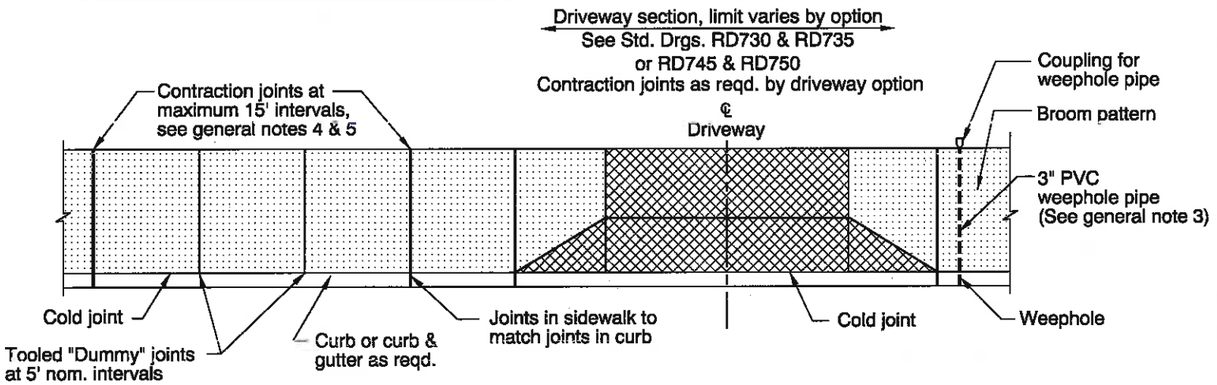
TYPICAL CURB SIDEWALK CROSS SECTION
E = curb exposure, see general note 6



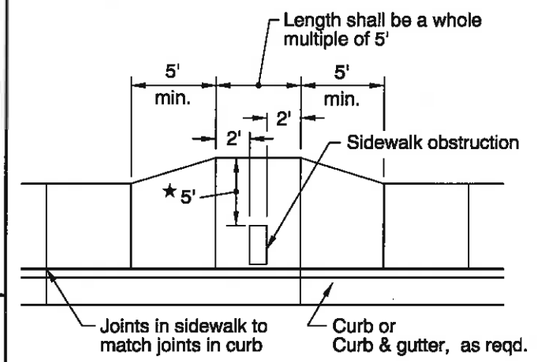
TYPICAL MONOLITHIC CURB & SIDEWALK
E = curb exposure, see general note 6



TYPICAL PLAN VIEW - SEPARATED SIDEWALK

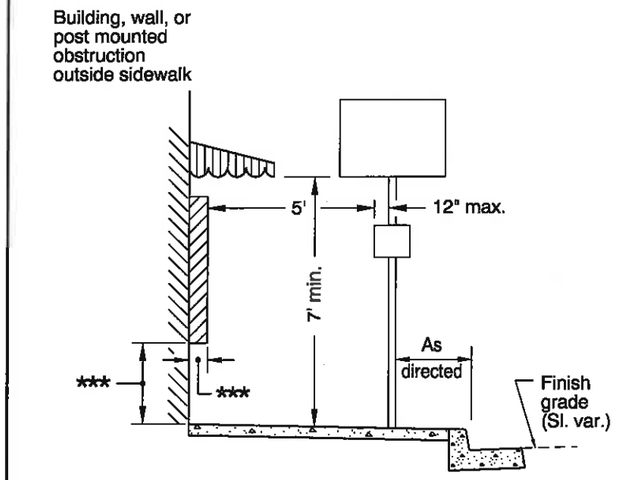


TYPICAL PLAN VIEW - CURB LINE SIDEWALK



★ When site constraints prohibit a 5' passage, the Engineer may direct this to be reduced, but no less than 4'.

REQUIRED SIDEWALK WIDENING
AROUND OBSTRUCTIONS



*** Objects with base below 2'-4" may protrude any distance as long as the 5' circulation path is maintained. When an object with a base higher than 2'-4" protrudes further than 4" provide a curb below protrusion to delineate edge.

CLEAR CIRCULATION PATH

General configuration of driveway pay limit (See general note 8), varies by option.

GENERAL NOTES FOR ALL DETAILS:

1. Include additional paved or unpaved 2' clearance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weephole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe.
4. Const. expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveway. For monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing.
5. Const. contraction joints at 15' maximum spacing, and at ends of each driveway and ramp.
6. For curb details, see Std. Drgs. RD700 & RD701.
7. Sidewalk details are based on United States Access Board Standards.
8. For driveway details not shown, see Std. Drgs. RD725, RD730, RD735, RD740, RD745 & RD750.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 23-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

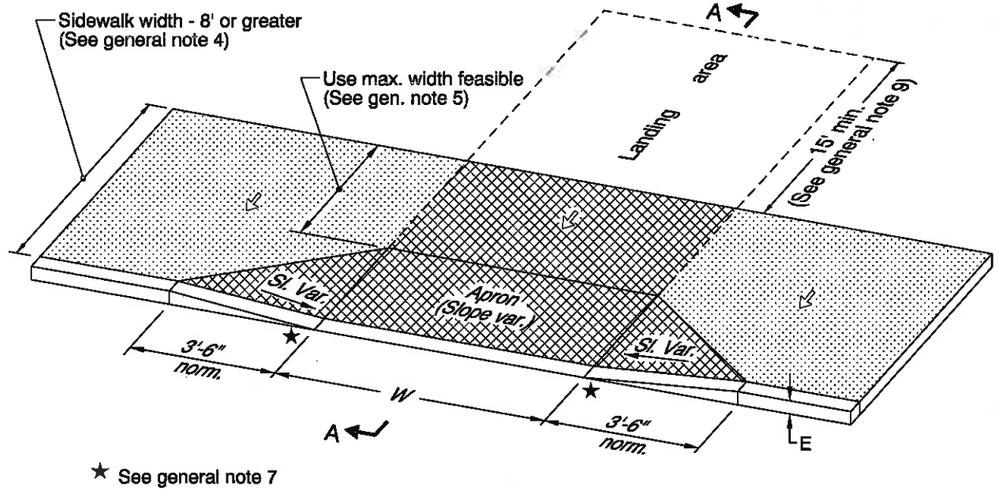
OREGON STANDARD DRAWINGS

SIDEWALKS

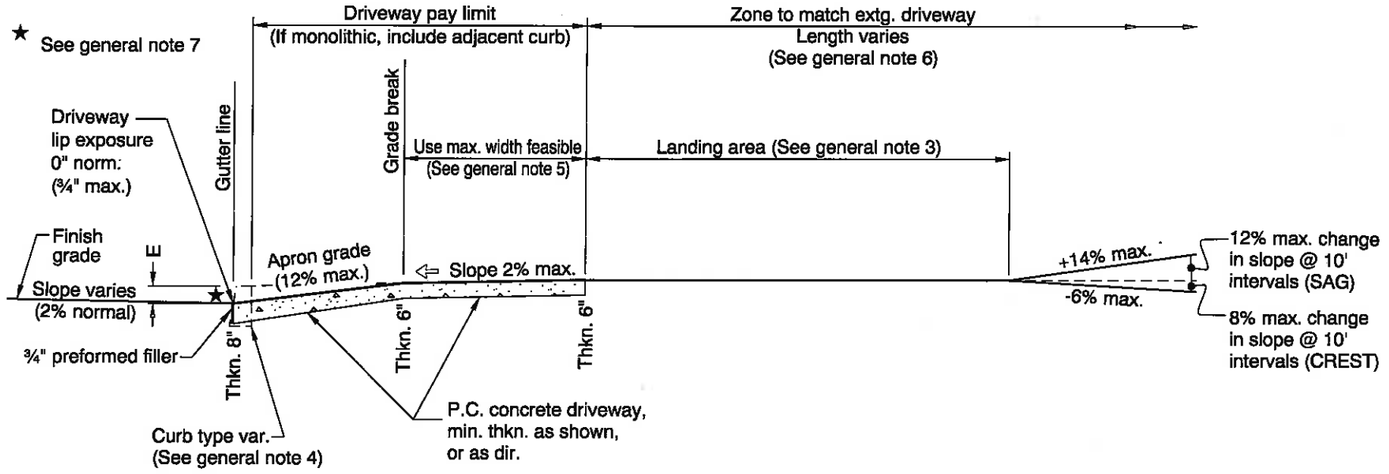
2008

DATE	REVISION DESCRIPTION
06-2009	REVISED DETAILS & NOTES
12-2009	REVISED DETAILS, DETAIL TITLES & NOTES
07-2012	REVISED DETAILS, REVISED & ADDED NOTES

RD720



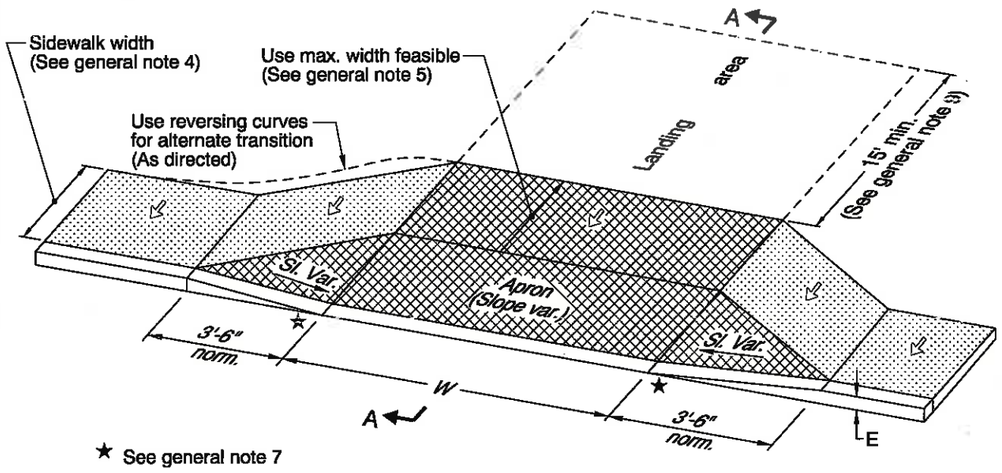
OPTION K
DRIVEWAY IN WIDE (8' OR GREATER) SIDEWALK



SECTION A-A

GENERAL NOTES FOR ALL DETAILS:

1. Details are based on United States Access Board Standards.
2. Only use details allowed by jurisdiction.
3. The following dimensions are as shown on plans, or as directed: driveway width, driveway slope, sidewalk width, curb exposure, driveway lip exposure, landing area length and width.
4. Curb, gutter, and sidewalk types varies, see plans.
   See Std. Drgs. RD700 & RD701 for curb details.
   See Std. Drg. RD720 for sidewalk details.
5. 4' unobstructed clear passage with slope of 2% max. is required behind driveway apron. 3.5' width is acceptable where sidewalk width is less than standard 6'.
6. Where existing driveway is in good condition, and meets slope requirements, construct only as much as required for satisfactory connection with new work.
7. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
8. Tooled joints are required at all driveway slope break lines.
9. 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
10. Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accomodate driveway use. See Std. Drg. RD720 for details.
11. Any dimensions except those of general note 5 may be amended by local agencies for their use.



OPTION L
SIDEWALK WRAPPED AROUND DRIVEWAY

⇦	Slope 2% max.
W	Width of driveway
E	Curb exposure
▨	Driveway pay limit (If monolithic, include adjacent curb)

NOTE:
This drawing is to be used by local agencies to assist them in the design of driveways on their facilities.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 23-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

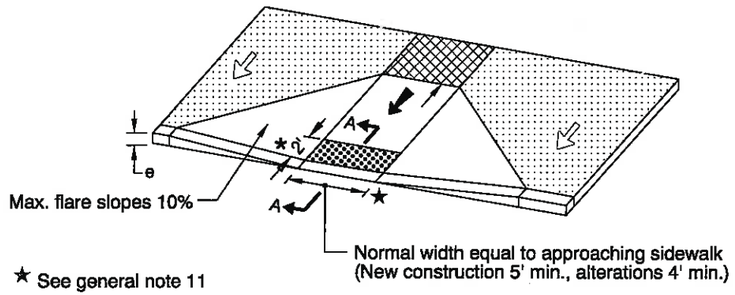
CURB LINE SIDEWALK DRIVEWAYS OR ALLEYS (OPTIONS K & L) LOCAL JURISDICTIONS

2008

DATE	REVISION DESCRIPTION
08-2009	REVISED DETAILS & NOTES
07-2011	REVISED DETAILS & NOTES
07-2012	REVISED DETAILS, REVISED & ADDED NOTES

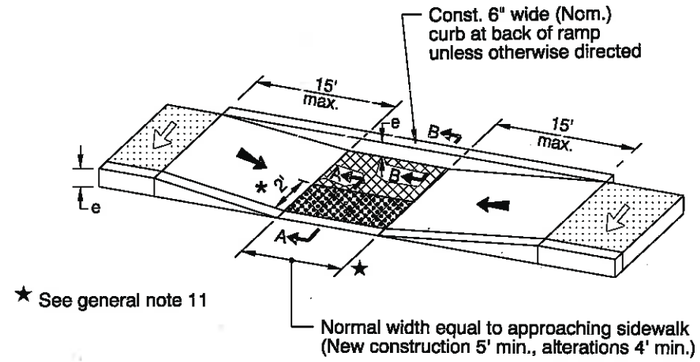
rd745.dgn 23-JUL-2012

RD745

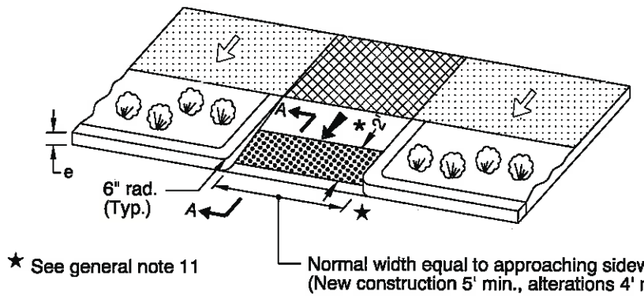


PERPENDICULAR SIDEWALK RAMP DETAIL

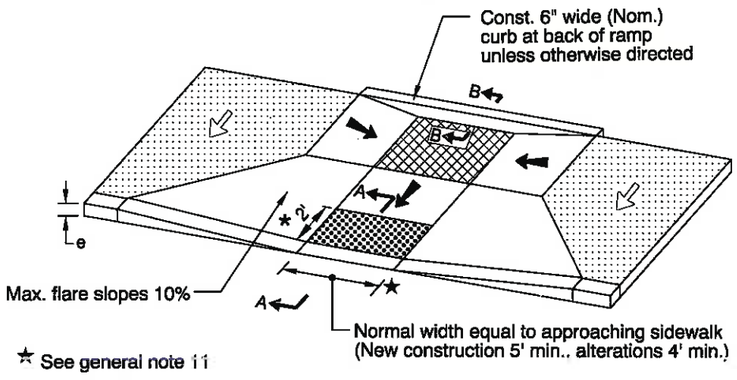
(Use "Parallel Sidewalk Ramp Detail" or "Combination Sidewalk Ramp Detail" when reqd. turning space cannot be obtained)



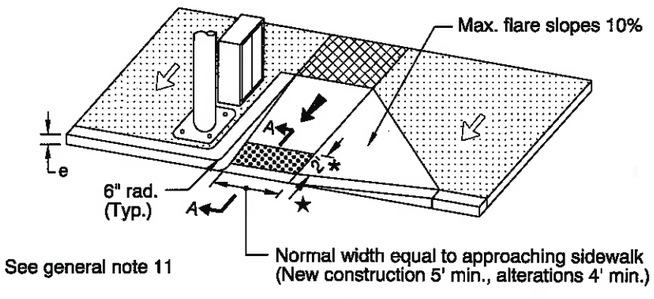
PARALLEL SIDEWALK RAMP DETAIL



PERPENDICULAR SIDEWALK RAMP DETAIL (THROUGH BUFFER STRIP)

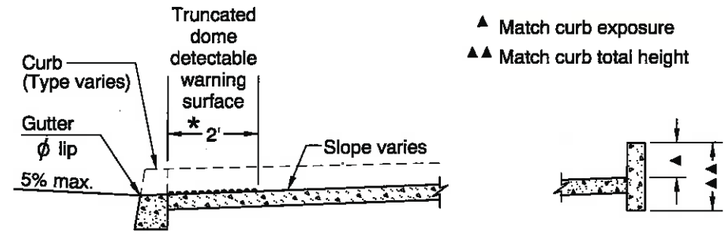


COMBINATION SIDEWALK RAMP DETAIL



PERPENDICULAR SIDEWALK RAMP DETAIL (WITH SINGLE FLARE)

(Use "Parallel Sidewalk Ramp Detail" or "Combination Sidewalk Ramp Detail" when reqd. turning space cannot be obtained)



SECTION A-A SECTION B-B

⇦ Slope 2% max.

◄ Slope 8.33% (1":12") max.

Truncated dome detectable warning surface

Turning space (Min. level area 48" x 48")
For the purposes of this application,
a 2% maximum slope (For drainage) is considered level

2' See general note 5

GENERAL NOTES FOR ALL DETAILS:

1. Sidewalk ramp details are based on United States Access Board Standards.
2. See Std. Drgs. RD700 & RD701 for curbs. See Std. Drg. RD720 for sidewalks. See Std. Drgs. TM503 & TM530 for crosswalk markings, widths, etc.
3. Tooled joints are required at all sidewalk ramp slope break lines.
4. Sidewalk curb ramp slopes shown are relative to the true level horizon (Zero bubble).
5. Place truncated dome detectable warning surface in the lower 2' adjacent to traffic of throat of ramp only. For details not shown, see Std. Drg. RD759.
6. Side flares that are not part of the path of travel may be any slope.
7. Sidewalk flare is not necessary where the ramp is protected from pedestrian cross-travel.
8. For the purpose of this drawing, a curb ramp is considered "perpendicular" if the angle between the longitudinal axis of the ramp and a line tangent to the curb at the ramp center is 75° or greater.
9. Ramps for paths intersecting a roadway should be full width of path, excluding flares. When a ramp is used to provide bicycle access from a roadway to a sidewalk, the ramp should be 8' wide.
10. For sidewalk ramp placement options, see Std. Drgs. RD756 & RD757.
11. Check the gutter flow depth at ramp locations to assure that the design flood does not overtop the back of sidewalk at ramp. If overtopping occurs place an inlet at upstream side of ramp or perform other approved design mitigation.
12. Only use details allowed by jurisdiction.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SIDEWALK RAMP DETAILS

2008

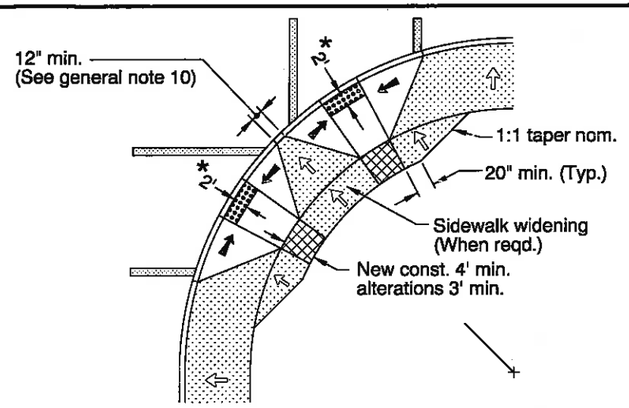
DATE	REVISION DESCRIPTION
06-2009	REVISED DETAILS & NOTES
12-2009	REVISED NOTE
07-2010	REVISED NOTE
01-2013	REVISED NOTES
07-2013	REVISED NOTES

08-JUL-2013

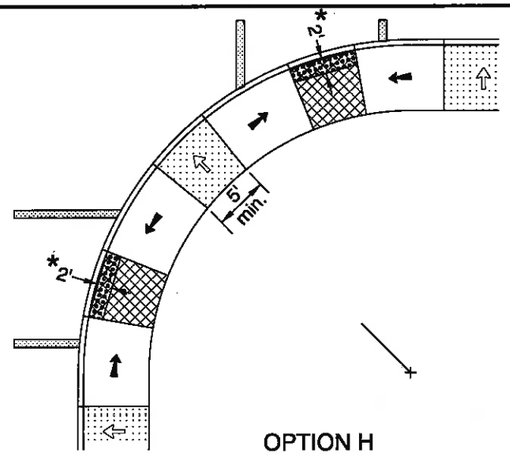
rd755.dgn

RD755

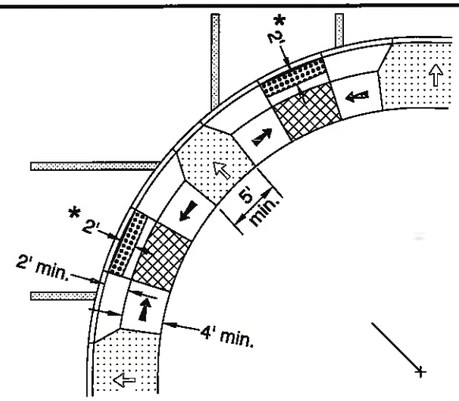
Effective Date: December 1, 2013 - May 31, 2014



OPTION G
PERPENDICULAR RAMPS (FOR NARROW SIDEWALKS)

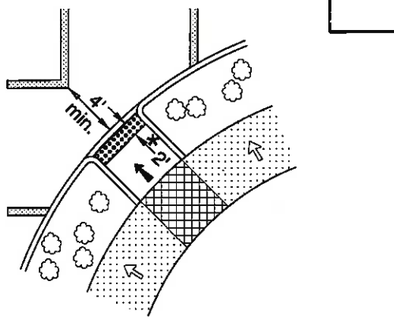


OPTION H
PARALLEL RAMPS (FOR NARROW SIDEWALKS)

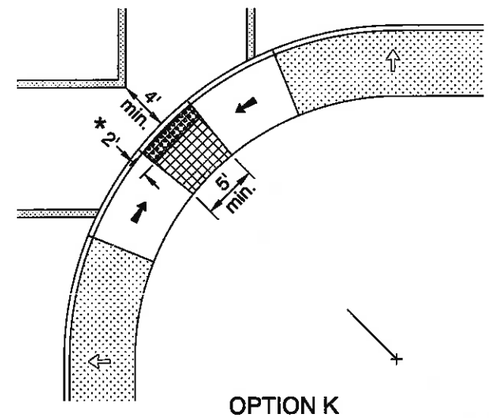


OPTION I
COMBINATION RAMPS (FOR WIDE SIDEWALKS)

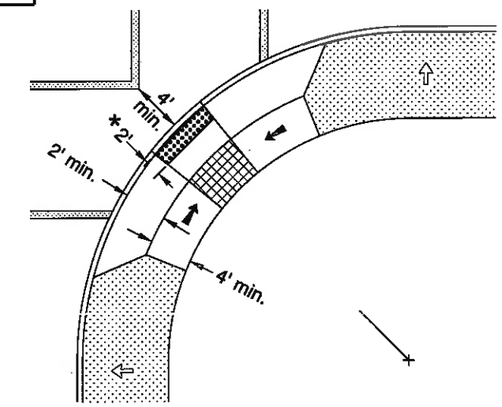
	Marked or intended crossing location	*2'	See general note 5
⇦	Slope 2% max.		Truncated dome detectable warning surface
⇦	Slope 8.33% (1":12") max. (Ramp length 15' max.)		Turning space (Min. level area 48" x 48") For the purposes of this application, a 2% maximum slope (For drainage) is considered level



OPTION J
DIAGONAL RAMP WITH LANDSCAPED BUFFER STRIP
Use in alterations only and when site constraints prohibit installing two ramps



OPTION K
DIAGONAL-PARALLEL RAMP (FOR NARROW SIDEWALKS)
Use in alterations only and when site constraints prohibit installing two ramps



OPTION L
DIAGONAL-COMBINATION RAMP (FOR WIDE SIDEWALKS)
Use in alterations only and when site constraints prohibit installing two ramps

GENERAL NOTES FOR ALL DETAILS:

1. Sidewalk ramp details are based on United States Access Board Standards.
2. See Std. Drgs. RD700 & RD701 for curbs. See Std. Drg. RD720 for sidewalks. See Std. Drgs. TM503 & TM530 for crosswalk markings, widths, etc. See Std. Drg. RD755 for sidewalk ramp details.
3. Tooled joints are required at all sidewalk ramp slope break lines.
4. Sidewalk curb ramp slopes shown are relative to the true level horizon (Zero bubble).
5. Place truncated dome detectable warning surface in the lower 2' adjacent to traffic of throat of ramp only. For details not shown, see Std. Drg. RD759.
6. Side flares that are not part of the path of travel may be any slope. Check the gutter flow depth to assure that the design flood does not overtop the back of sidewalk. If overtopping occurs place an inlet at upstream side or perform other approved design mitigation.
7. Sidewalk flare is not necessary where the ramp is protected from pedestrian cross-travel.
8. For the purpose of this drawing, a curb ramp is considered "perpendicular" if the angle between the longitudinal axis of the ramp and a line tangent to the curb at the ramp center is 75° or greater.
9. Ramps for paths intersecting a roadway should be full width of path, excluding flares. When a ramp is used to provide bicycle access from a roadway to a sidewalk, the ramp should be 8' wide.
10. When 2 curb ramps are immediately adjacent as in Option G, the curb exposure (e) between the adjacent side flares may range between 3" and full design exposure.
11. Only use options allowed by jurisdiction.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SIDEWALK RAMP PLACEMENT OPTIONS CURB RADII > 15'

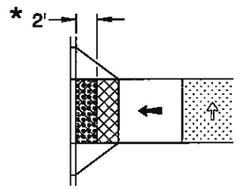
2008

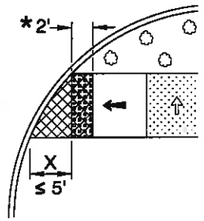
DATE	REVISION DESCRIPTION
06-2009	REVISED DETAILS & NOTES
07-2010	REVISED DETAILS & NOTES
01-2013	REVISED NOTE
07-2013	REVISED NOTES

08-JUL-2013 rd757.dgn

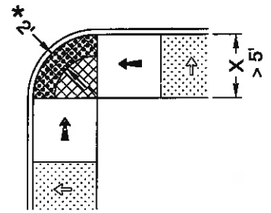
RD757

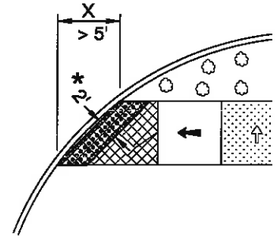
Effective Date: December 1, 2013 - May 31, 2014





When distance "X" is less than 5', truncated dome detectable warning surface shall be placed perpendicular to the path of travel.





When distance "X" is greater than 5', truncated dome detectable warning surface shall be placed parallel to the bottom of curb ramp.

PLACEMENT ON SIDEWALK RAMP

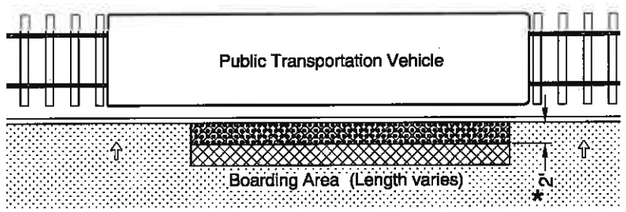
Slope 2% max.

Slope 8.33% (1":12") max.
(Ramp length 15' max.)

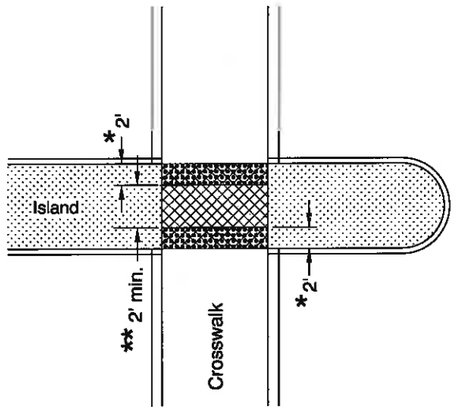
Truncated dome detectable warning surface

Turning space (Minimum level area 48" x 48")
For the purposes of this application,
a 2% maximum slope (For drainage) is considered level

* 2' See general note 3

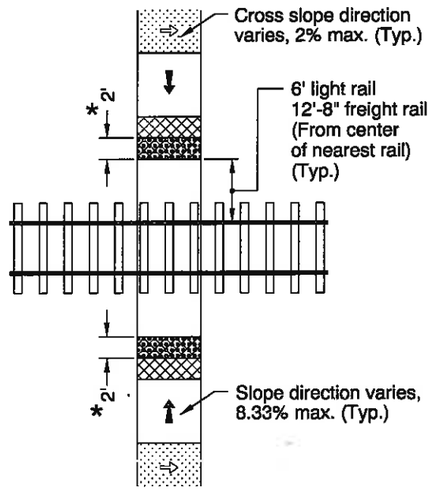


PLACEMENT ON PUBLIC TRANSPORTATION PLATFORM



** Omit truncated dome detectable warning surface if less than 2'

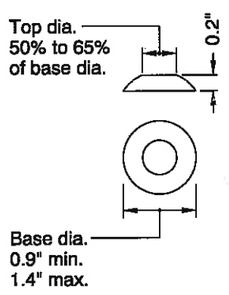
PLACEMENT ON CROSSING ISLAND



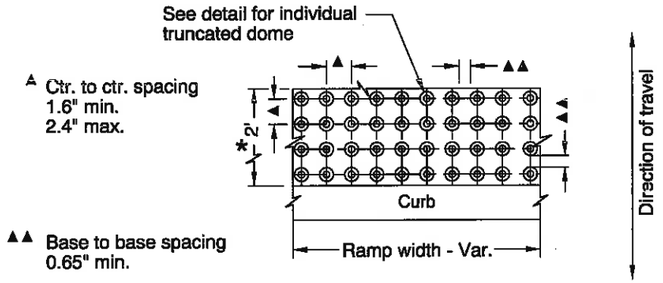
PLACEMENT AT RAIL CROSSING

GENERAL NOTES FOR ALL DETAILS:

1. Truncated dome detectable warning surface details & locations are based on United States Access Board Standards.
2. See Std. Drgs. RD700 & RD701 for curbs. See Std. Drg. RD720 for sidewalks. See Std. Drgs. TM503 & TM530 for crosswalk markings, widths, etc.
3. Place truncated dome detectable warning surface in the lower 2' adjacent to traffic of throat of ramp only, unless otherwise shown. Arrange domes using square in-line pattern only. Color to be safety yellow if no color specified in construction note. All products on an installation to be identical.
4. Truncated dome detectable warning surface shall be used where the pedestrian access route meets the street, in the following locations:
   a) Sidewalk ramps (See Std. Drgs. RD755, RD756, & RD757).
   b) Crossing islands (Accessible Route Islands), (See Std. Drg. RD710).
   c) Rail crossings (See detail).
5. Where public transportation stations (rail, bus, etc.) use platform boarding, truncated dome detectable warning surface shall be placed along the full edge length of the station, when not protected by platform screens or guards.
6. Truncated dome detectable warning surface shall not be used on the following locations:
   a) Midblock sidewalk transitions (See Std. Drg. RD756).
   b) Standard concrete driveways (See Std. Drgs. RD725, RD730, RD735, RD740, RD745, & RD750).
   c) Parking lots.
7. Only use details allowed by jurisdiction.



TRUNCATED DOME DETAIL



TRUNCATED DOME PATTERN

TRUNCATED DOME DETECTABLE WARNING SURFACE

CALC. BOOK NO. N/A

BASELINE REPORT DATE 08-JUL-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

TRUNCATED DOME DETECTABLE WARNING SURFACE

DETAILS & LOCATIONS

2008

DATE	REVISION DESCRIPTION
12-2009	REVISED DIMENSIONS AND NOTE
07-2010	REVISED DETAILS & NOTES
07-2012	REVISED NOTE
01-2013	REVISED NOTE
07-2013	REVISED NOTES

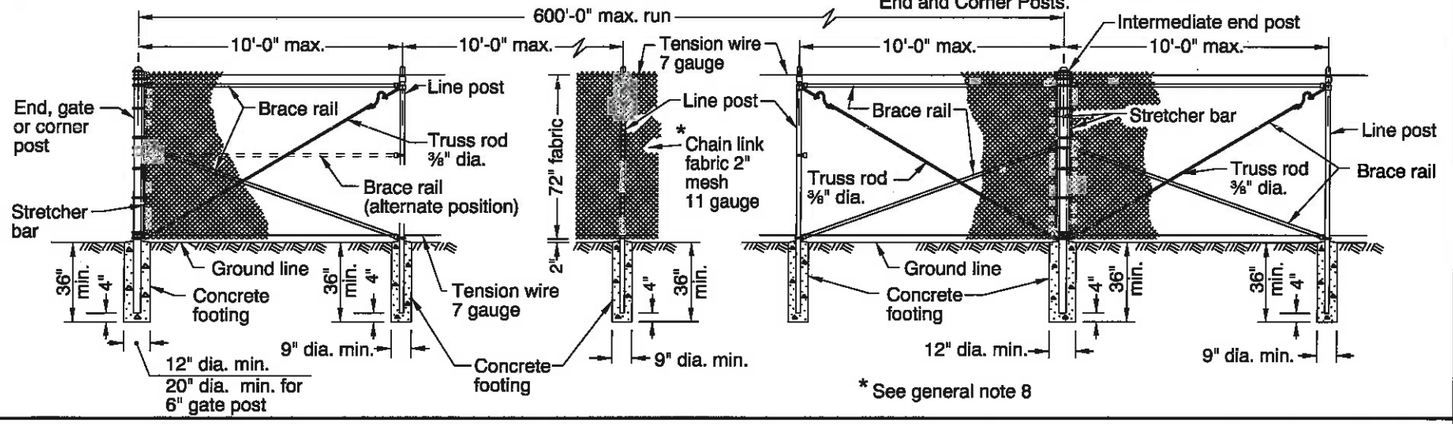
rd759.dgn 08-JUL-2013

RD759

Effective Date: December 1, 2013 - May 31, 2014

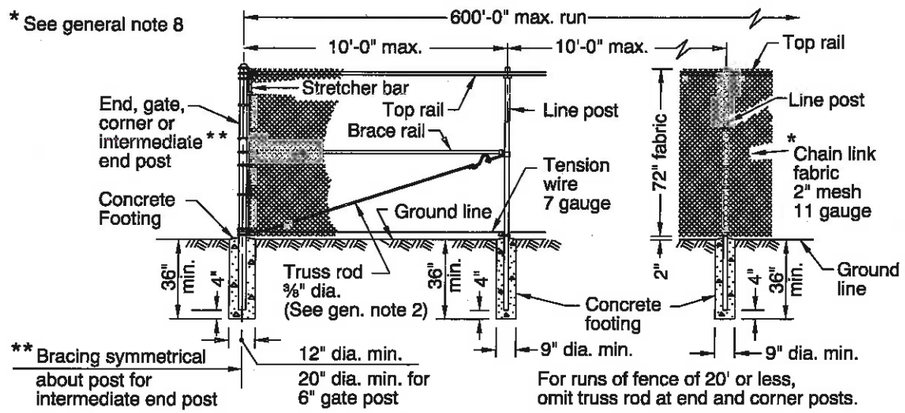
rd815.dgn 29-JAN-2013

TYPE CL-6

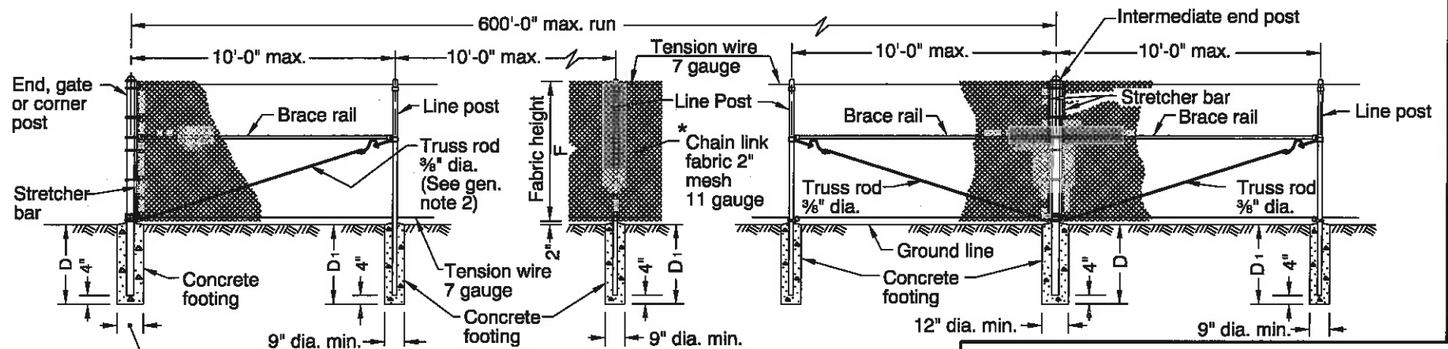


* See general note 8

TYPE CL-6R



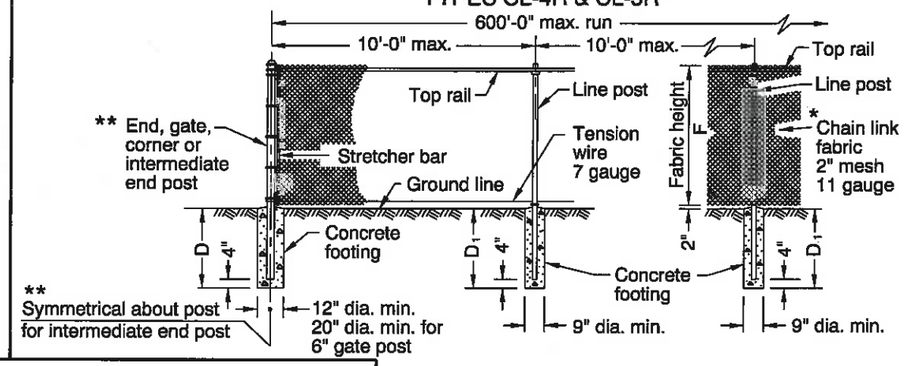
TYPES CL-4 & CL-5



* See general note 8

TYPE	D min. (in)	D_1 min. (in)	F nom. (in)
CL-4	30	24	48
CL-5	36	36	60

TYPES CL-4R & CL-5R



* See general note 8

TYPE	D min. (in)	D_1 min. (in)	F nom. (in)
CL-4R	30	24	48
CL-5R	36	36	60

For runs of fence of 20' or less, omit truss rod at end and corner posts.

GATES

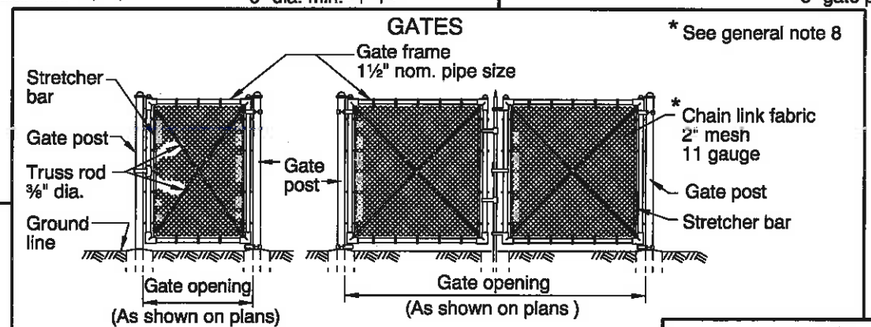


TABLE 1

	TYPE	MEMBER								GATE OPENING (ft)		GATE POSTS		
		BRACE AND TOP RAILS		LINE POSTS				END, CORNER & INTERMEDIATE END POST						
		TUBULAR		TUBULAR		H-SECTION		TUBULAR				TUBULAR		
		Fence Industry (in)	Nom. Dia. (in)	Fence Industry (in)	Nom. Dia. (in)	Size (in)	Wt. lb/ft	Fence Industry (in)	Nom. Dia. (in)	SINGLE GATE	DOUBLE GATE	Fence Industry (in)	Nom. Dia. (in)	
STEEL	CL-4 & CL-4R CL-5 & CL-5R	1⅝	1¼	1⅞	1½	1⅞ x 1⅝	2.72	2⅜	2	Up thru 6	Up thru 12	2⅞	2½	STEEL
										7 thru 13	13 thru 26	4	3½	
	CL-6 & CL-6R	1⅝	1¼	2⅜	2	2¼ x 2	4.10	2⅞	2½	14 thru 18	27 thru 36	6⅝	6	

GENERAL NOTES FOR ALL DETAILS:

1. Do not use top rail where fence can be struck by an errant vehicle.
2. Fittings shown are illustrative of use and not specific as to design.
3. Gate posts on each side of a gate opening to be the same size. At a double gate installation with unequal width gates, size of both posts to be as indicated for a single gate installation of the wider gate width.
4. For cross sectional dimensions of members, see Table 1.
5. Posts and rails with sections not shown that meet the requirements of AASHTO M181 are acceptable alternates. See ODOT's QPL for acceptable alternates.
6. All concrete shall be commercial grade concrete.
7. All chain link fabric top and bottom selvage shall be knuckled finish.
8. Chain link fabric for the fence to be installed with pickets shall be 9 gauge wire woven in 3½" by 5½" diamond mesh.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 07-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

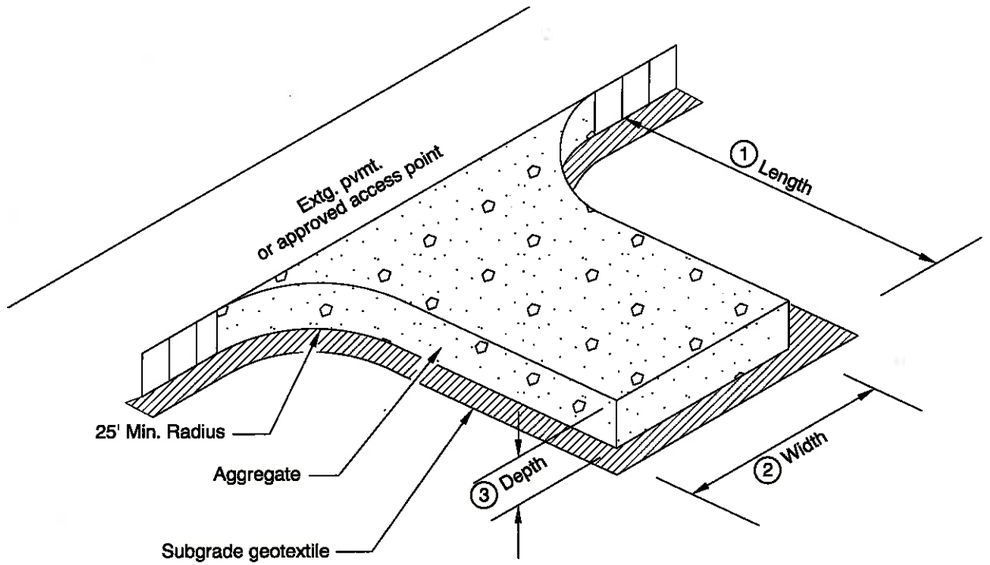
OREGON STANDARD DRAWINGS

CHAIN LINK FENCE

2008

DATE	REVISION DESCRIPTION
06-2009	REVISED NOTES
12-2009	REVISED NOTES
01-2011	REVISED NOTES
01-2013	REVISED TABLE 1 & NOTES

RD815



Notes:

1. Length:
   50' min. - for less than 1 acre exposed soil
   100' min. - for greater than 1 acre exposed soil
2. Width:
   20' - or width of extg. approach, whichever is greater.
3. Depth:
   8" min

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

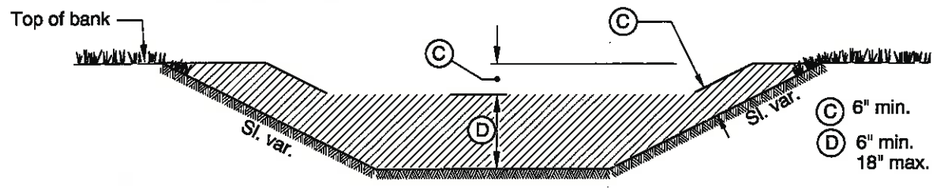
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

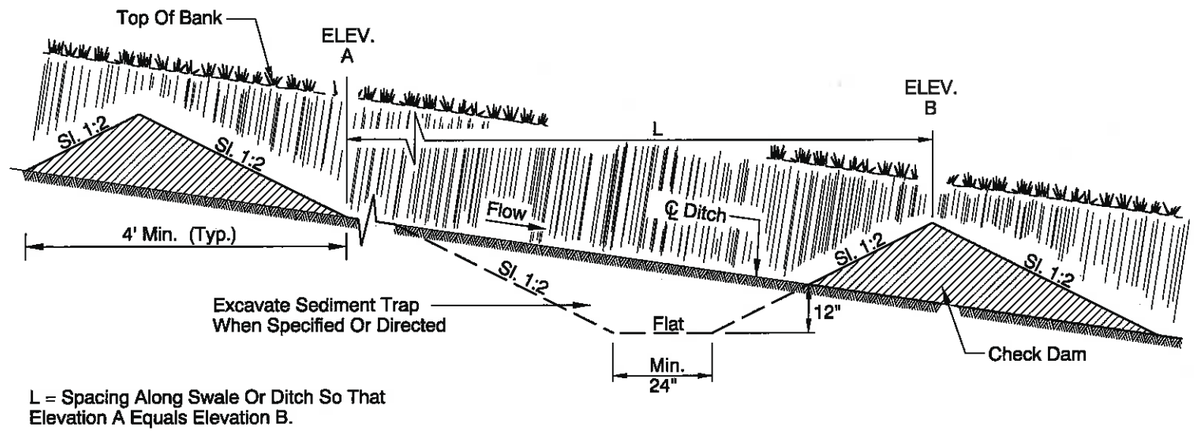
CONSTRUCTION ENTRANCES

2008

DATE	REVISION DESCRIPTION



DITCH X-SECTION AT CHECK DAM



L = Spacing Along Swale Or Ditch So That Elevation A Equals Elevation B.

DITCH PROFILE SECTION WITH CHECK DAMS

Note:
When bid item is "Check Dams" the following materials may be used, as appropriate to meet the functional requirements of the control.
Type 1. aggregate
Type 2. straw bales with aggregate weir
Type 3. biofilter bags
Type 4. sand bags
Type 5. prefab. check dam system

CHECK DAM
Approximate Spacing

Ditch Grade	D = Dimension		
	6"	12"	18"
6%	* *	15' O.C.	25' O.C.
5%	* *	20'	30'
4%	* *	25'	40'
3%	15'	30	50'
2%	25'	50'	80'

* * Not Allowed

Notes:

① Type 2 only - - - -
Entrench bales and aggr. a min. of 4" into the soil. Toe of last bale is highest water control point.

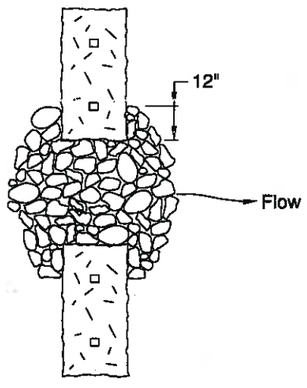
② Type 2 only - - - -
Place bales so wire/twine binding matl. is not in contact with the soil.

③ Type 2 or 3 - - - -
Drive 2 stakes min. per bale or bag flush with top and into undisturbed ground a min. of 4". Stakes may be omitted if placed over paved surfaces.

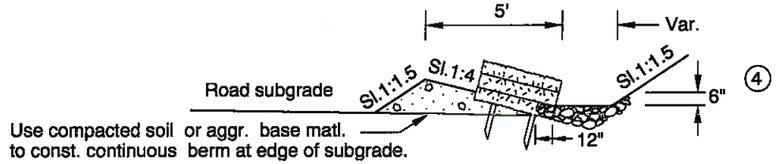
④ Type 2, 3or 4 - - - -
Const. top of aggr. a min. of 6" lower than the toe of last bale or bag.

⑤ Type 2 or 4 - - - -
Tightly abut or overlap ends of bales or bags at each joint.

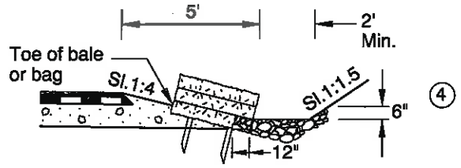
⑥ Type 3 - - - -
Overlap bags 6" min. at each joint.



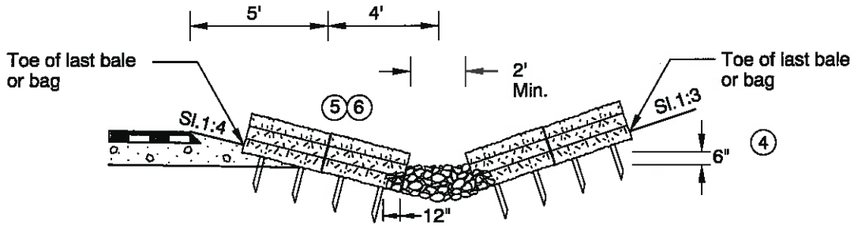
TOP VIEW
TYPE 2, 3 & 4



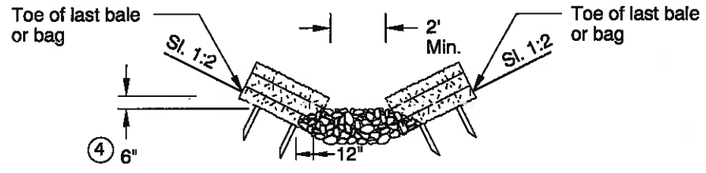
SUBGRADE SECTION



STEEP BACKSLOPE SECTION



VARIABLE BACKSLOPE SECTION - 1:3 TO 1:6



FLAT BOTTOM DITCH SECTION CHECK DAM TYPE 2, 3 & 4

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

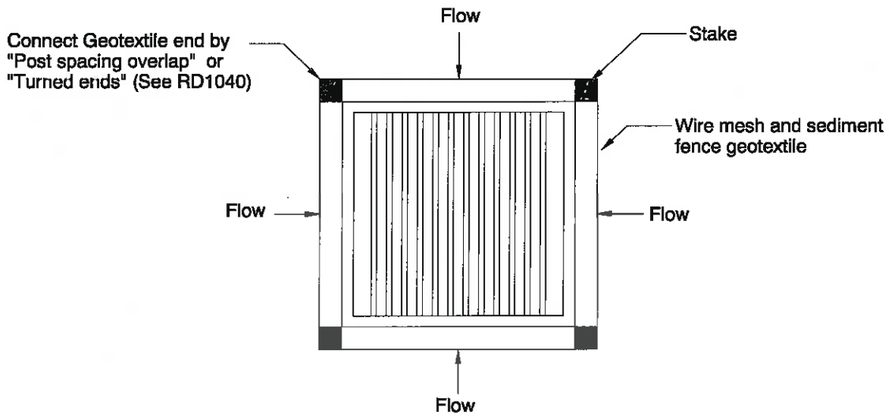
CHECK DAMS

2008

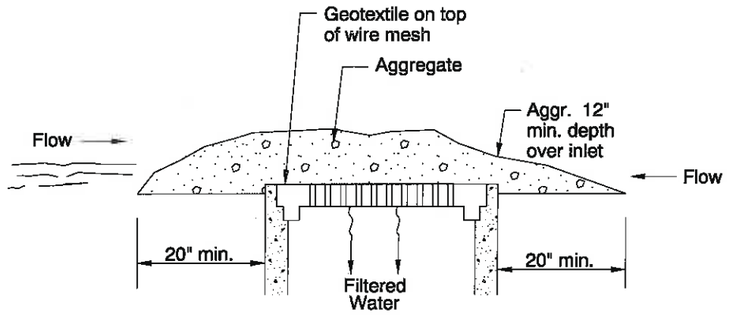
DATE	REVISION DESCRIPTION

rd1005.dgn 12-31-2008

RD1005

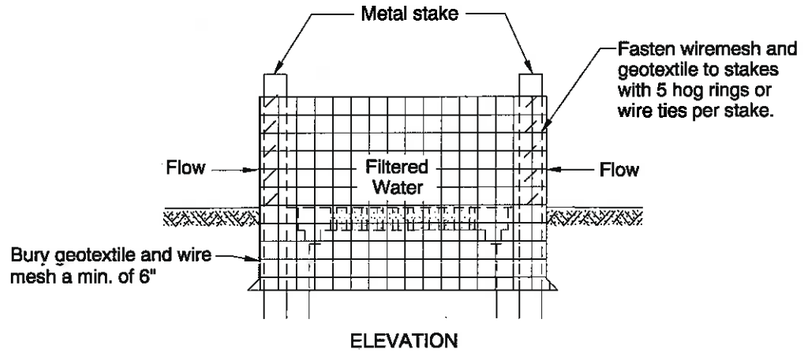


PLAN



GEOTEXTILE/WIREMESH/AGGREGATE

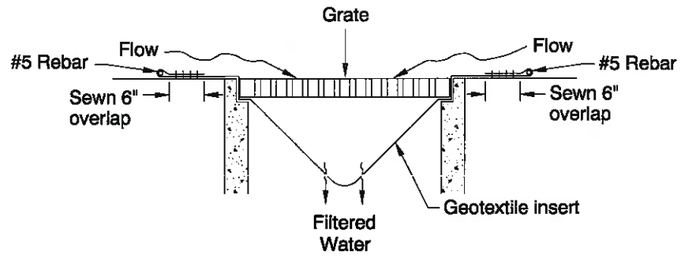
TYPE 2



ELEVATION

SEDIMENT FENCE

TYPE 1



PREFABRICATED FILTER INSERT

TYPE 3

INLET PROTECTION						
Site Conditions Where Types Are Appropriate	TYPE					
	1	2	3	4	5	6
Area Drain, Soil	Y	Y	Y	Y	Y	Y
Area Drain, Pavement	N	Y	Y	Y	Y	N
Ditch Inlet, Soil	Y	N	Y	Y	N	Y
Ditch Inlet, Pavement	N	N	Y	Y	N	N
Grate Inlet Along Curb, Soil	N	Y	Y	Y	Y	Y
Grate Inlet Along Curb, Pavement	N	Y	Y	Y	Y	N
Curb Opening Inlet, Soil	N	N	N	Y	Y	Y
Curb Opening Inlet, Pavement	N	N	N	Y	Y	N

For Inlet Protection Types 4 and 5 see RD1015 and RD1020.

Note:
Type 1 Sediment Fence
Type 2 Geotextile/wire mesh/aggregate
Type 3 Prefabricated filter insert
Type 4 Biofilter bags
Type 5 Masonry/aggregate
Type 6 Sod

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2013

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OREGON STANDARD DRAWINGS

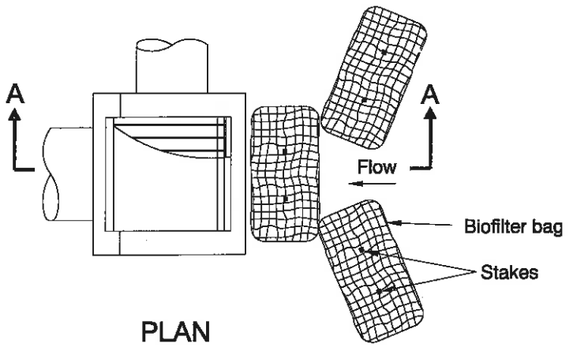
INLET PROTECTION
(TYPE 1, 2 & 3)

2008

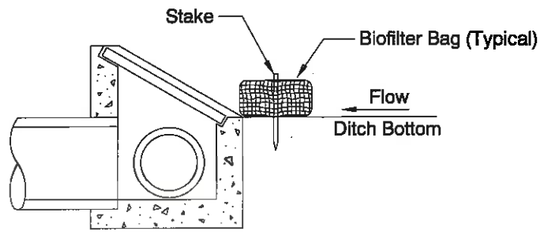
DATE	REVISION DESCRIPTION

rd1010.dgn 12-31-2008

RD1010

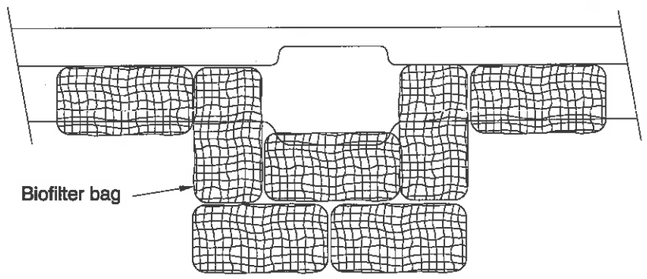


PLAN

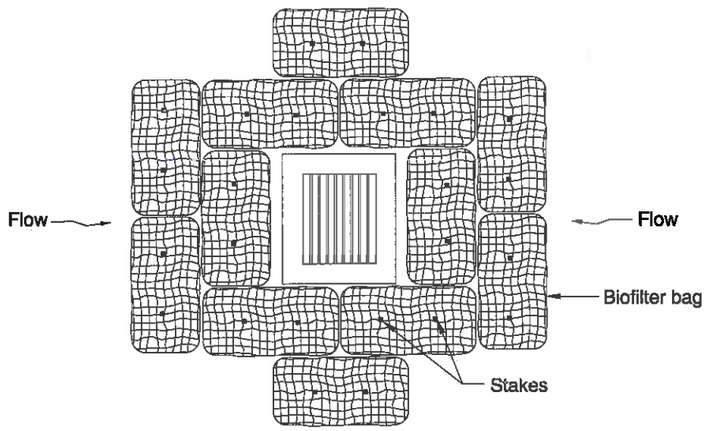


SECTION A-A

DITCH INLET



PLAN
CATCH BASIN



AREA DRAIN

Note:

1. Use 2 stakes per bag. Stakes may be omitted if bags are placed on pavement surface.
2. Overlap all bag joints.6".

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

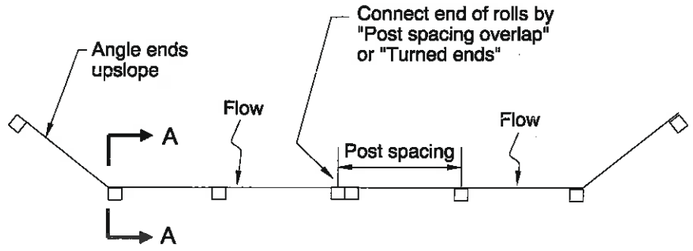
INLET PROTECTION
(TYPE 4)
BIOFILTER BAGS

2008

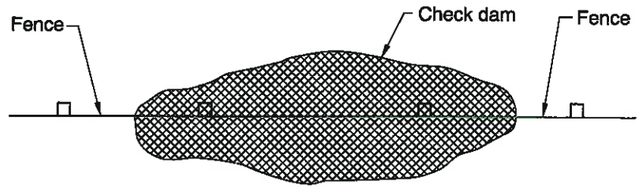
DATE	REVISION DESCRIPTION

rd1015.dgn 12-31-2008

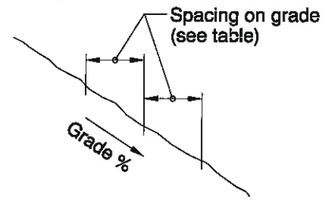
RD1015

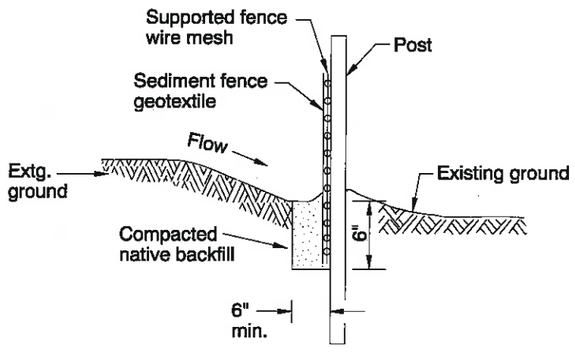


PLAN

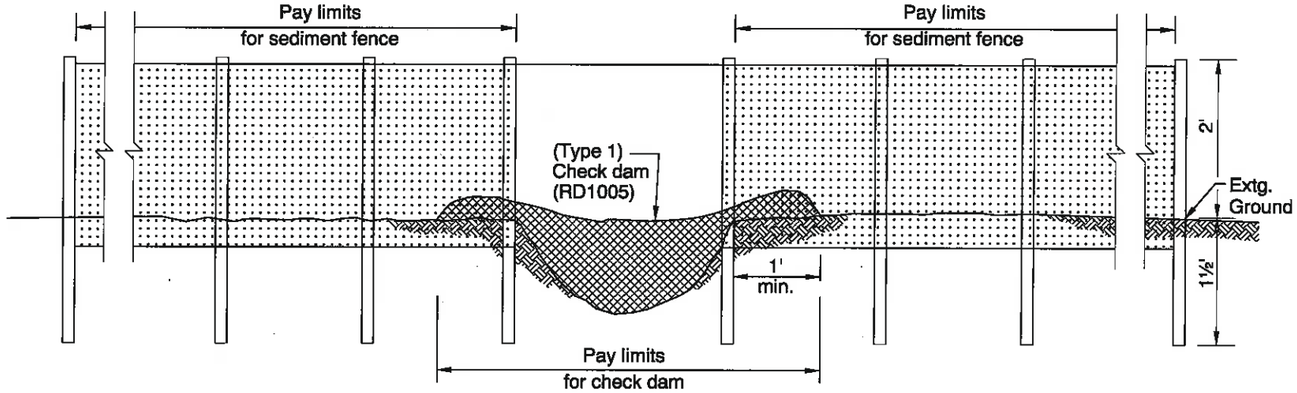


PLAN VIEW AT DITCH SECTION





SECTION A-A



ELEVATION VIEW AT DITCH SECTION OR LOW AREAS

TABLE 1

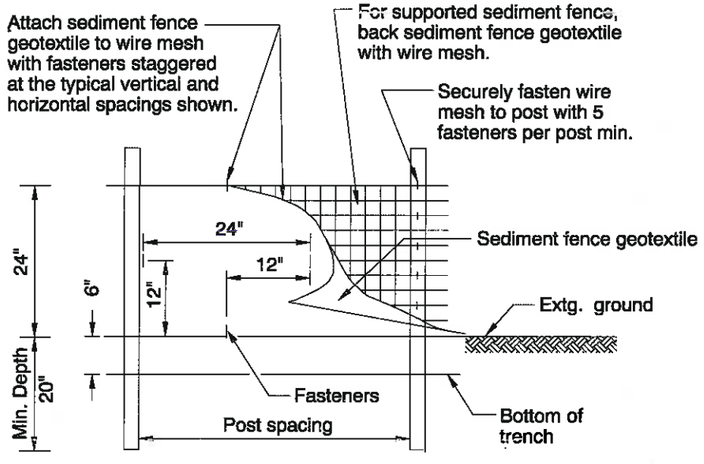
FENCE SPACING FOR GENERAL APPLICATION

INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

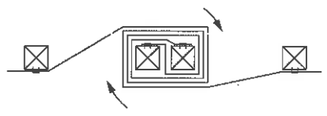
TABLE 2

POST SPACING	
4'	Supported Sediment Fence
6'	Unsupported Sediment Fence with Geotextile elongation *less than 50%
4'	Unsupported Sediment Fence with Geotextile elongation *more than 50%

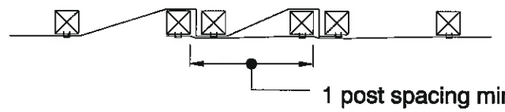
* Geotextile grab elongation value as documented by "Level B" manufacturer's documentation (See Standard Specifications).



ELEVATION



TURNED ENDS
1 5/64 Turns



POST SPACING OVERLAP

GEOTEXTILE END CONNECTIONS

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

SEDIMENT FENCE, SUPPORTED
SEDIMENT FENCE, UNSUPPORTED

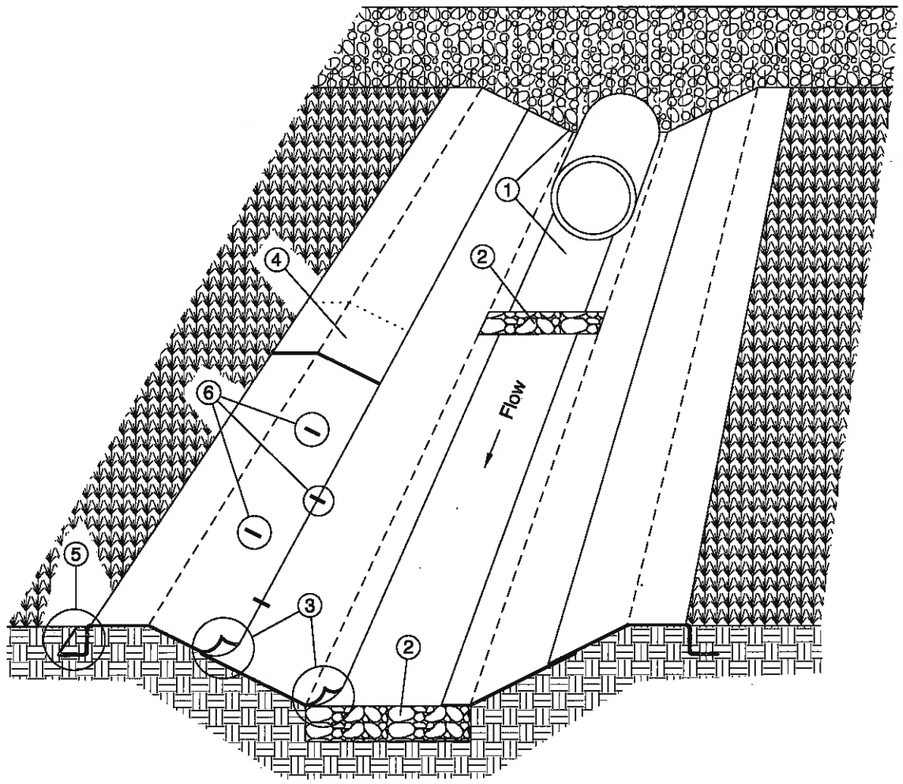
2008

DATE	REVISION DESCRIPTION

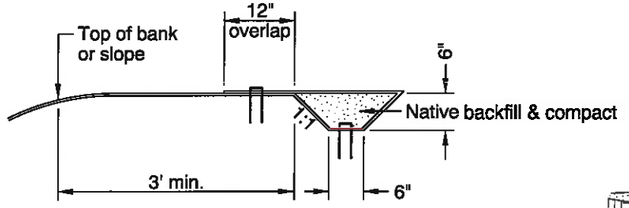
rd1040.dgn 12-31-2008

RD1040

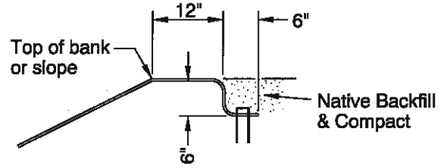
rd1055.dgn 12-31-2008



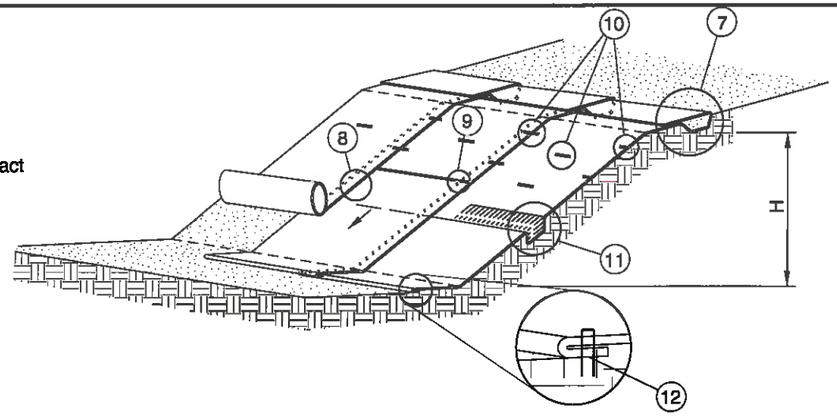
CHANNEL APPLICATION



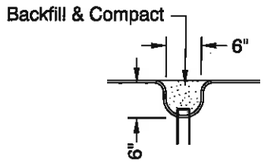
(TRENCH, H > 3')
FIGURE A1



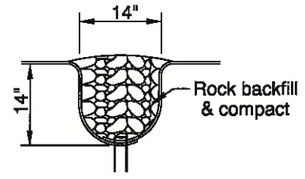
(TRENCH, H ≤ 3')
FIGURE A2



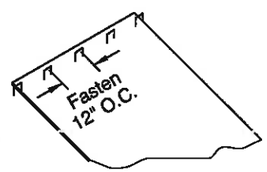
SLOPE APPLICATION



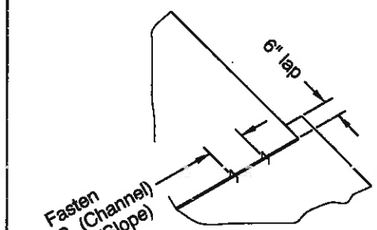
(CHECK SLOT, SLOPE)
FIGURE A3



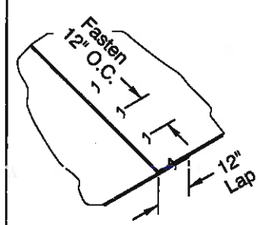
(CHECK SLOT, CHANNEL)
FIGURE A4



(BEGINNING EDGE)
FIGURE B1



(EDGE LAPS)
FIGURE B2



(END LAPS)
FIGURE B3

All applications

All information shown is minimum criteria for matting installation. All manufacturer's recommendations which are more stringent must be applied.

Channel application:

(1) Install mat in center of channel, in the direction of water flow. Anchor upstream end of mat with check slot (Fig. B1 & A4). Backfill check slot with rock. For culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.

(2) Construct check slots across channel bottom at 50' spacings and at the end of each mat (Fig. A4). Fasten mat at bottom of check slot (Fig. A4 & B1). Backfill check slot with rock.

(3) Overlap side channel mat edges 6" over the center channel mat and fasten edges 12" O.C. (Fig. B2). Continue overlap and stapling pattern for each additional side mat.

(4) Lap upstream mat end 12" over beginning edge of downstream mat. fasten 12" O.C. (Fig. B3).

(5) Anchor top edge of side channel mats in trench and fasten 12" O.C. (Fig. A2 & B1)

(6) Fasten mat interior at 24" O.C. staggered spacing.

Slope application:

(7) Anchor matting at top of slope (Fig. A1 & A2) Fasten in trench and at overlap 12" O.C. (Fig. B1)

(8) Overlap mat edges 6" and fasten (Fig. B2). Install matting so edge overlaps are shingled away from prevailing winds. Fasten edges 24" O.C.

(9) Overlap mat ends 12", upper mat over lower mat, and fasten (Fig. B3).

(10) Stagger alternate rows of fasteners placed at 24" O.C.

(11) Construct check slot when specified or as recommended by the manufacturer (Fig A3). Fasten mat in bottom of check slot (Fig. A3 & B1)

(12) Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten (Fig. B1)

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MATTING

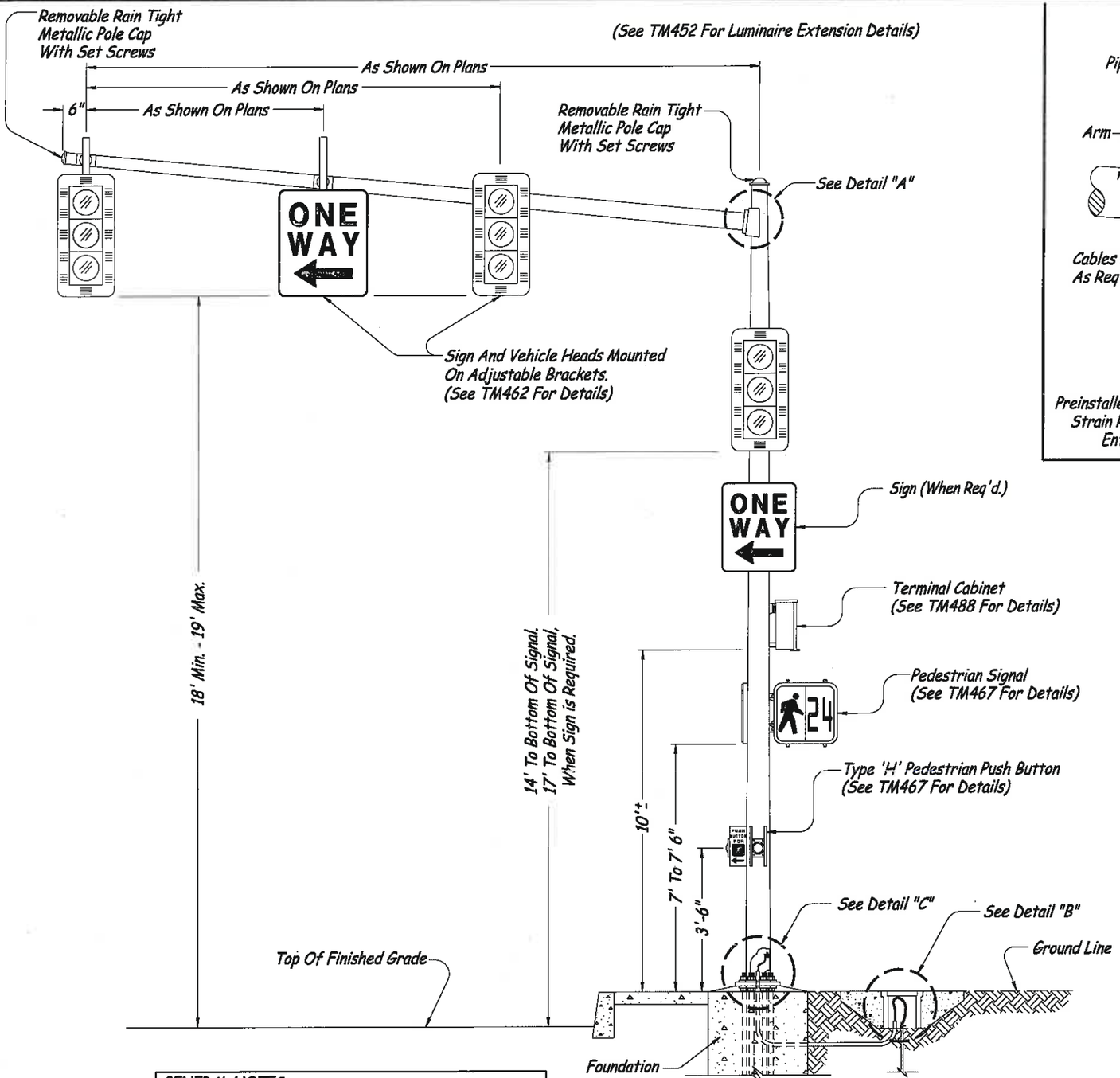
2008

DATE	REVISION DESCRIPTION

RD1055

Effective Date: December 1, 2013 - May 31, 2014

RD1055



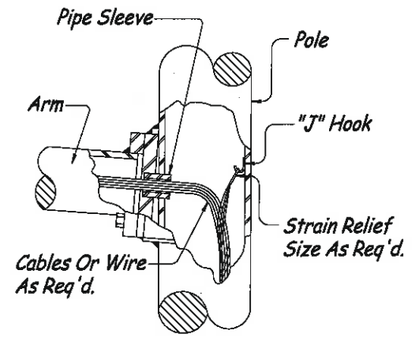
GENERAL NOTES:

1. All Pole Entrances Containing Wiring Shall Be Smooth.
2. See TM462 For Adjustable Bracket Details.

NOTE:

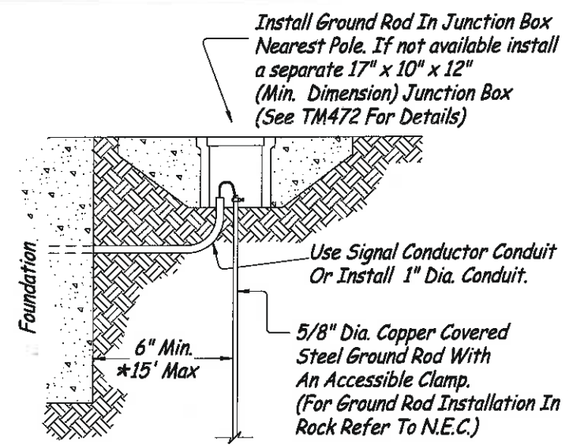
All Bolts, Nuts And Washers Shall Be Stainless Steel Unless Noted Otherwise.

MAST ARM POLE



DETAIL "A"

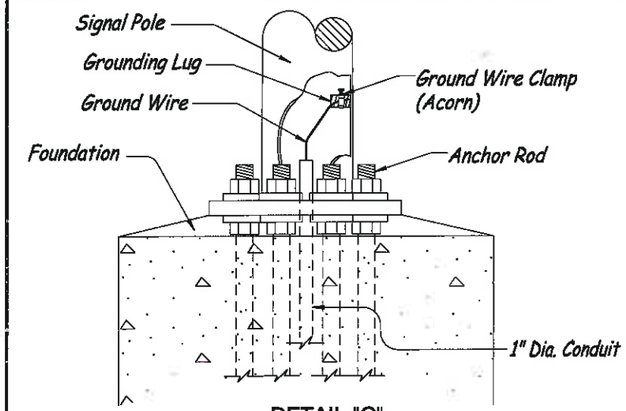
Preinstalled "J" Hooks In Poles For Wire Compression Strain Relief Devices (Cable Grips) At All Access Entrances For Luminaire & Signal Arms.



DETAIL "B"

*See Specifications For Structure Mounted Poles. 15' Max. Does Not Apply When Using The First Junction Box Nearest The Pole.

STANDARD GROUND ROD INSTALLATION DETAIL



DETAIL "C"

INTERIOR GROUND DETAIL

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

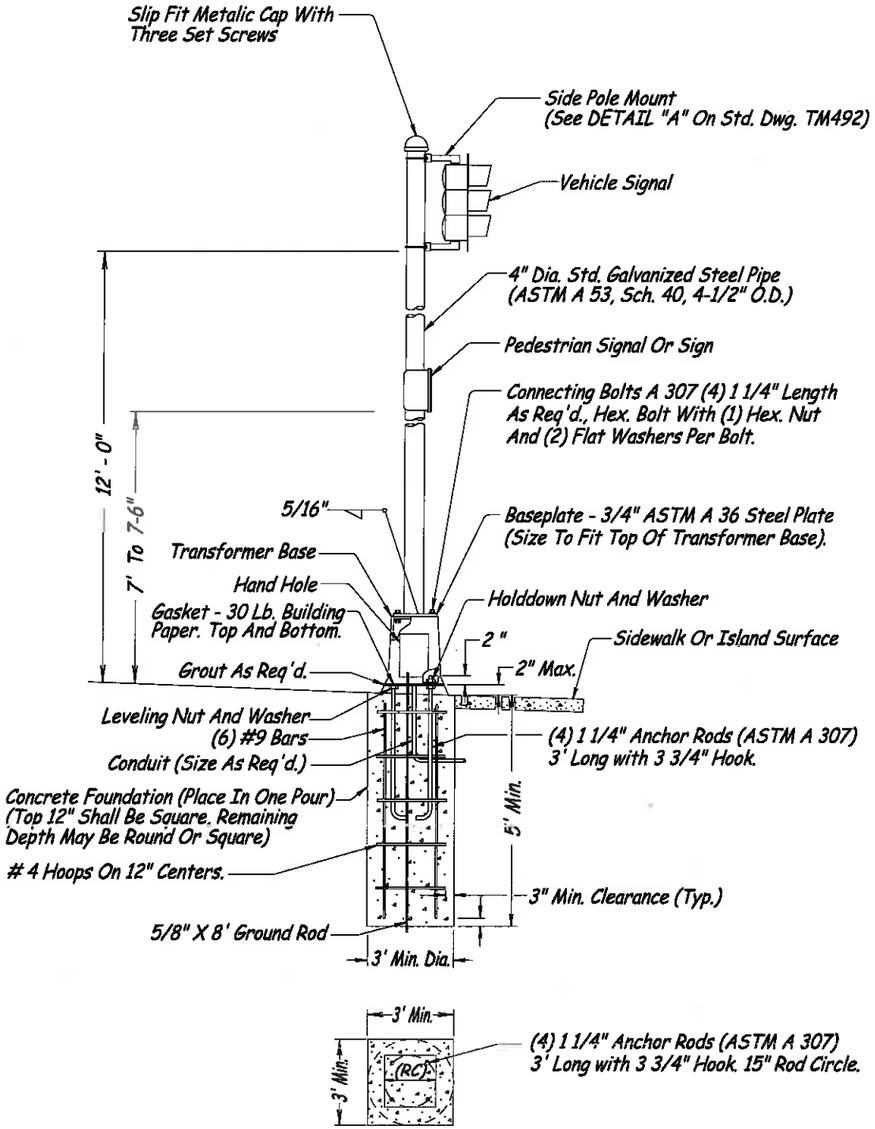
The selection and use of this Standard Drawing; while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

MAST ARM POLE DETAILS

2008

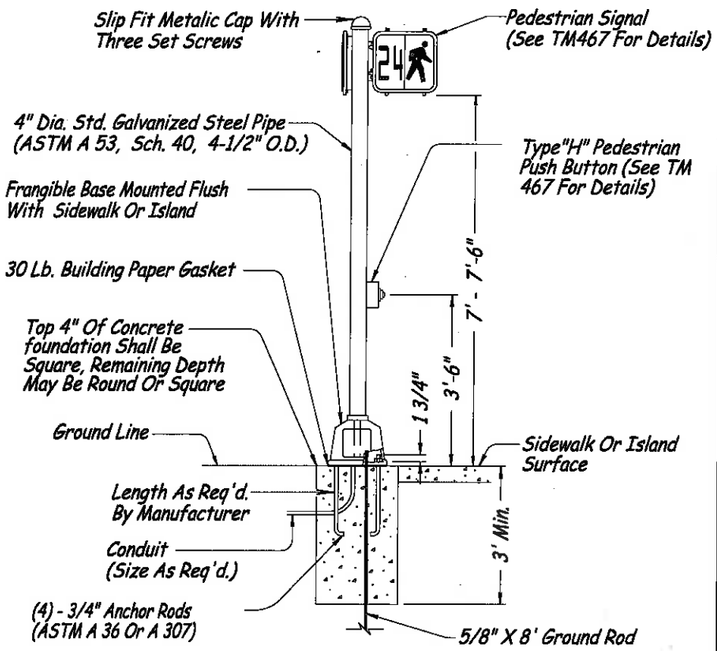
REVISIONS	
DATE	DESCRIPTION
12 - 2009	CHANGED ANCHOR BOLT TO ANCHOR ROD
12 - 2009	ADDED 15' DISTANCE MAX. TO THE GROUND ROD INSTALLATION
6 - 2011	CHANGED DIMENSION TO BOTTOM OF SIGNAL, UPDATED NOTES
12 - 2012	ADDED GROUND WIRE CLAMP (ACORN), DETAIL 'C'

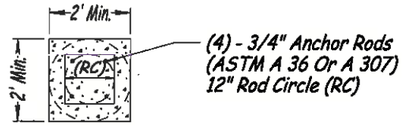


VEHICLE SIGNAL PEDESTAL

NOTE:

Flat Side Of Pedestal Base Can Be Lined Up With Back Of Sidewalk





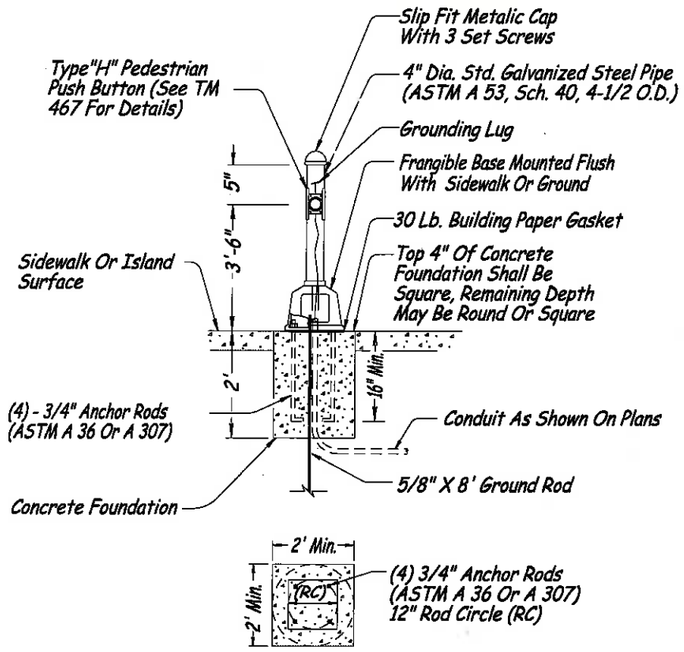
PEDESTRIAN SIGNAL PEDESTAL

GENERAL NOTES:

All Surface Joints Where Concrete And Aluminum Meet Shall Be Gasketed With 30 Lb. Building Paper

All Rods, Bolts, Nuts And Washers Shall Be Galvanized Steel Unless Noted Otherwise

All Pole Entrances Containing Wiring Shall Be Smooth



PEDESTRIAN OR BICYCLE PUSH BUTTON POST

CALC. BOOK NO. N/A

BASELINE REPORT DATE 06-28-13

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

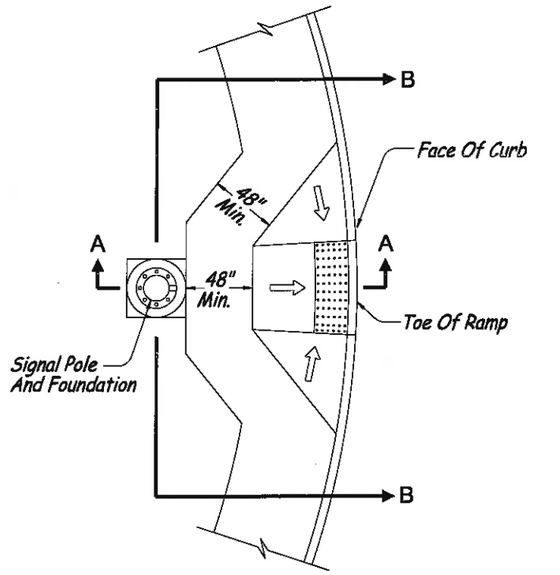
OREGON STANDARD DRAWINGS

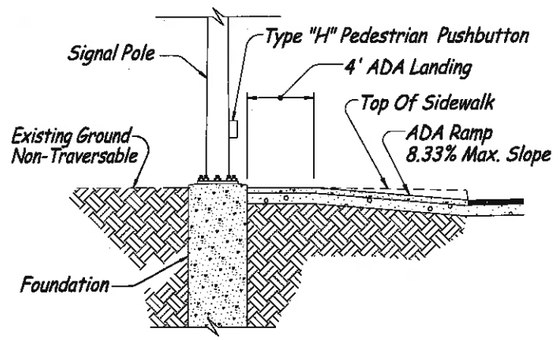
VEHICLE, PEDESTRIAN SIGNAL AND PUSHBUTTON MOUNTING OPTION DETAILS

2008

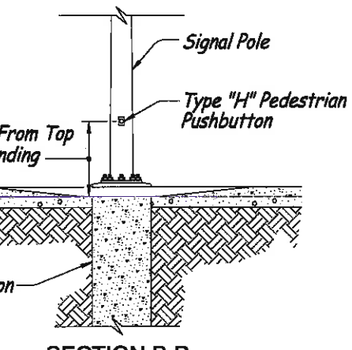
REVISIONS

DATE	DESCRIPTION
12 - 2009	CHANGED ANCHOR BOLT TO ANCHOR ROD
06 - 2011	UPDATED FOUNDATION DIMENSIONS, VARIOUS NOTE CHANGES
12 - 2012	DELETE METAL POLE BARRIER DETAIL, USE RDWY. DET1710
06 - 2013	CHANGED ANCHOR ROD EXPOSURE FROM 2-1/2" to 2".





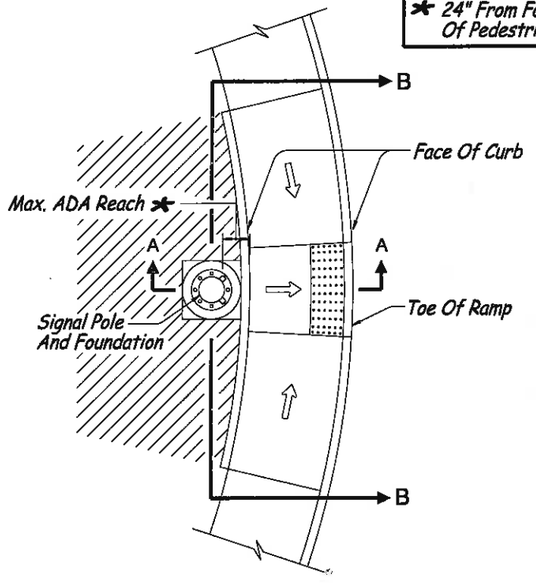
SECTION A-A

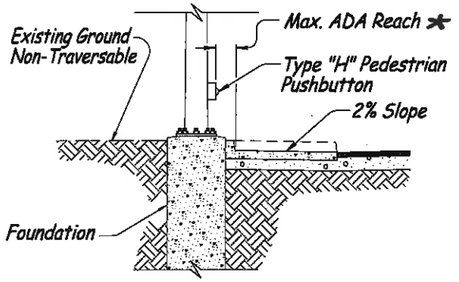


SECTION B-B

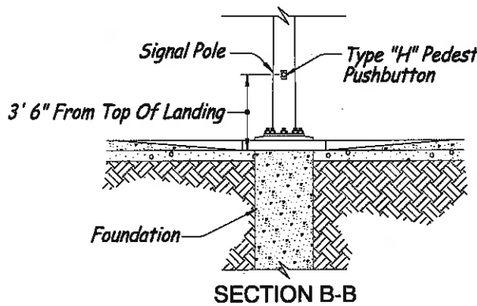
SIGNAL POLE AT PERPENDICULAR SIDEWALK RAMP

✱ 24" From Face Of Curb To Face Of Pedestrian Pushbutton



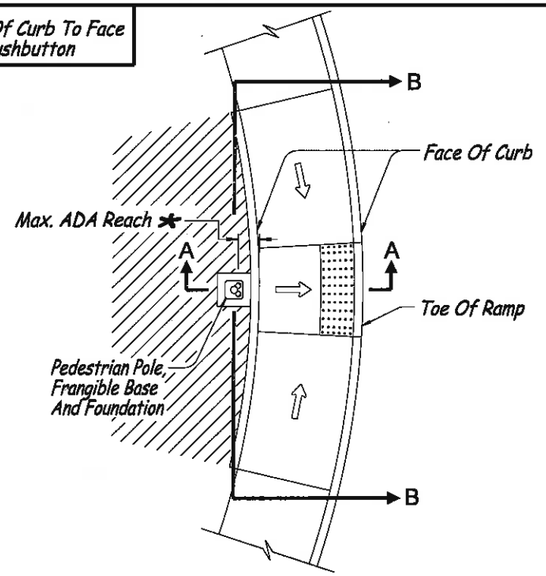


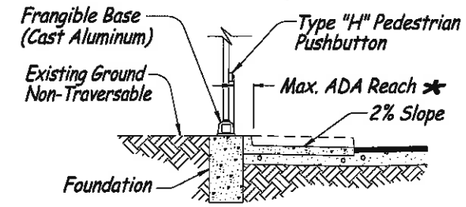
SECTION A-A



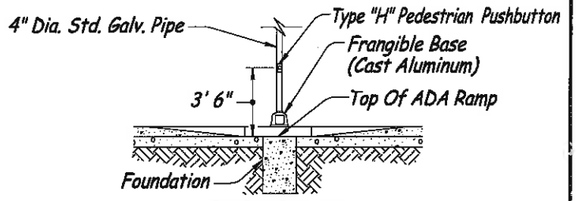
SECTION B-B

SIGNAL POLE AT PARALLEL SIDEWALK RAMP



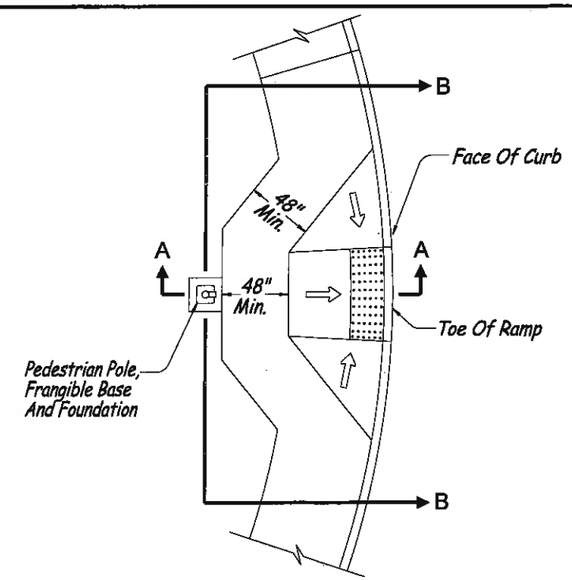


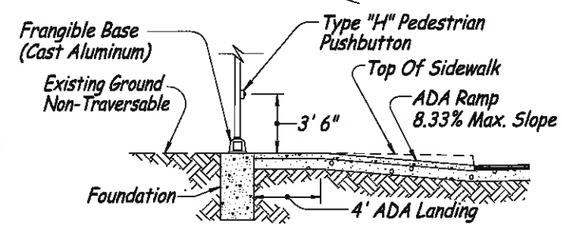
SECTION A-A



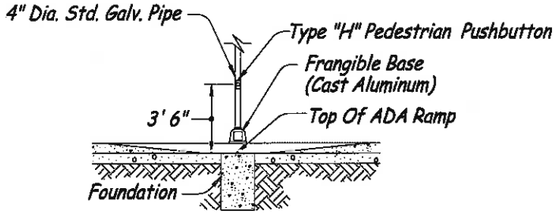
SECTION B-B

PEDESTRIAN SIGNAL PEDESTAL AT PARALLEL RAMP





SECTION A-A



SECTION B-B

PEDESTRIAN SIGNAL PEDESTAL AT PERPENDICULAR RAMP

⇦ Direction Of Slope

Area Shown Hatched Shall NOT Be Paved.

NOTES:

1) Square Top Of Signal Pole Foundation Can Be Rotated To Match Back Of Walk.

2) For Signal Pole And Pedestrain Pole Details Not Shown See TM450, TM457, TM467 And TM650 Thru TM653.

3) For ADA Ramp Details Not Shown See RD755

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-01-10

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

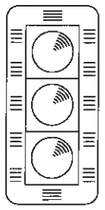
OREGON STANDARD DRAWINGS

PEDESTRIAN RAMP PLACEMENT DETAILS

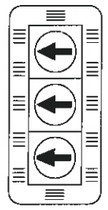
2008

REVISIONS

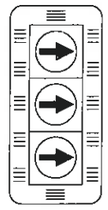
DATE	DESCRIPTION
12 - 2009	REMOVED PED POLE MATERALS & MINOR TEXT CHANGES



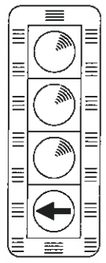
TYPE 2
Lens Arrangemnet
"In Line"
Standard Vehicle
Signal



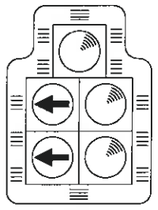
TYPE 3L
Lens Arrangement
"In Line"
Protected Left
Turn Signal



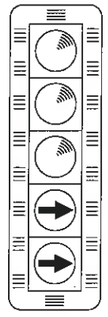
TYPE 3R
Lens Arrangement
"In Line"
Protected Right
Turn Signal



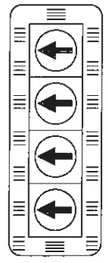
TYPE 4
Lens Arrangement
"In Line"
Left Turn/Through
(Used For Split Phase)



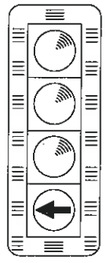
TYPE 4L
Lens Arrangement
"Doghouse" Left Turn
Protected / Permitted



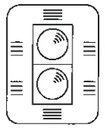
TYPE 5
Lens Arrangement
"In Line" Right Turn
Protected / Permitted



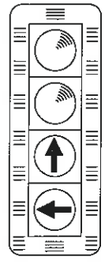
TYPE 6L
Lens Arrangement
"In Line" Left Turn
Protected / Permitted



TYPE 7
Lens Arrangement
"In Line"
Left Turn/Through
(Used For Rail Preemption Only)



TYPE 8
Lens Arrangement
"In Line"
(Ramp Meter Only)



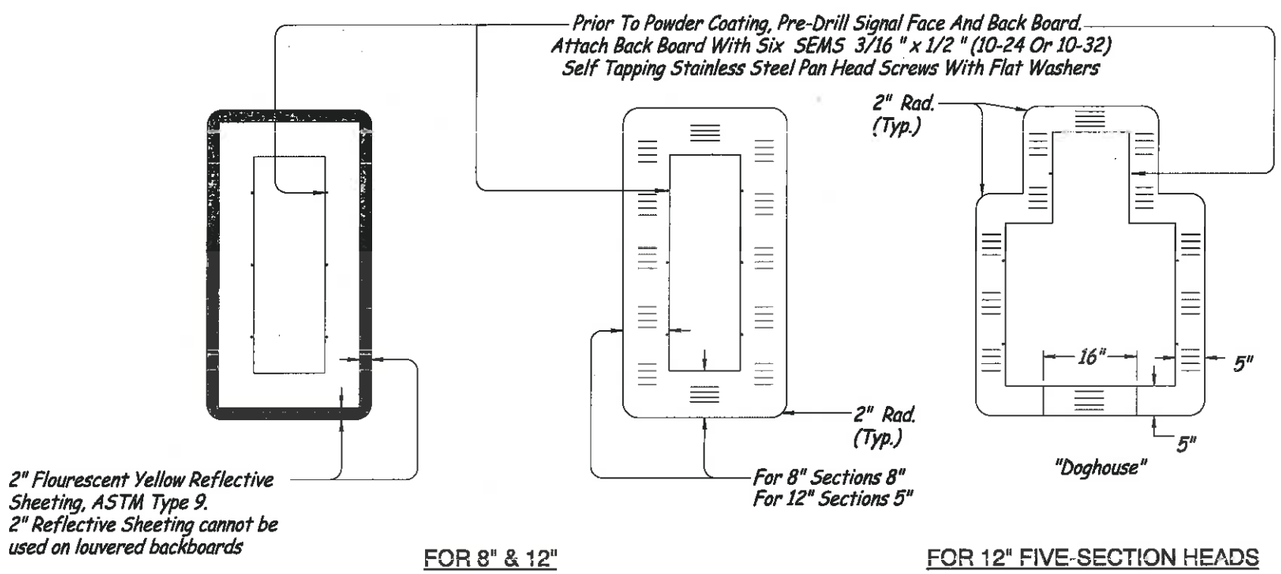
TYPE 9
Lens Arrangement
"In Line"
Left Turn/Through Arrow
(Used When There Is A Dual Left /Through)

Color Indication And Nominal Lens Size:	
R	Red Circular
Y	Yellow Circular
G	Green Circular
RLTA	Red Left Turn Arrow
YLTA	Yellow Left Turn Arrow
GLTA	Green Left Turn Arrow
RRTA	Red Right Turn Arrow
YRTA	Yellow Right Turn Arrow
GRTA	Green Right Turn Arrow
FYLTA	Flashing Yellow Left Turn Arrow
GTA	Green Through Arrow

2	3L	3R	4	4L		5	6L	7	8	9	10	
12" R	12" RLTA	12" RRTA	12" R	12" R		12" R	12" RLTA	12" R	8" R	12" R	12" R	12" R
12" Y	12" YLTA	12" YRTA	12" Y	12" YLTA	12" Y	12" Y	12" YLTA	12" Y	8" G	12" Y		12" Y
12" G	12" GLTA	12" GRTA	12" G	12" GLTA	12" G	12" G	12" FYLTA	12" G		12" GTA		
			12" GLTA			12" YRTA	12" GLTA	12" GLTA		12" GLTA		
						12" GRTA						

TYPE 10
Lens Arrangement
"Hawk"
Stop / Stop
Yellow

VEHICLE SIGNAL HEAD DESIGNATIONS



FOR 8" & 12"

FOR 12" FIVE-SECTION HEADS

BACKBOARDS

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

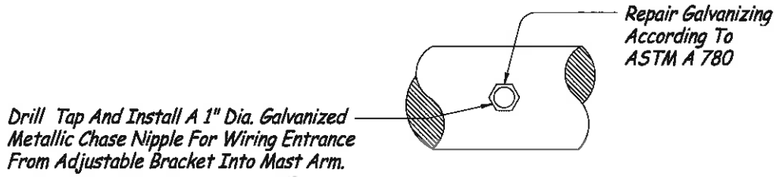
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

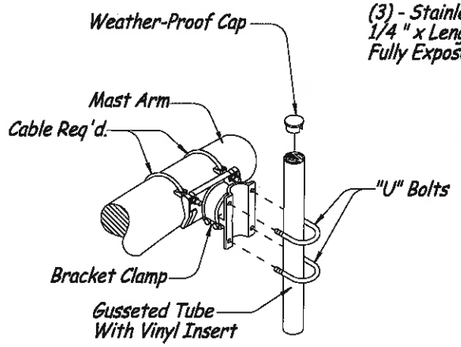
OREGON STANDARD DRAWINGS

VEHICLE SIGNAL DETAILS

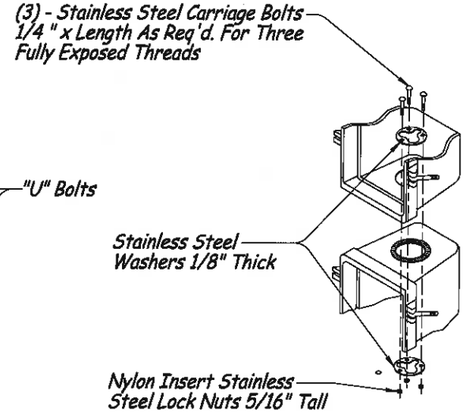
2008

REVISIONS	
DATE	DESCRIPTION
06 - 2011	DELETED TYPE 1 & 4R SIGNALS, ADDED TYPE 9 & 10 SIGNALS
12 - 2012	ADDED REFLECTORIZED BACKBOARD & TEXT

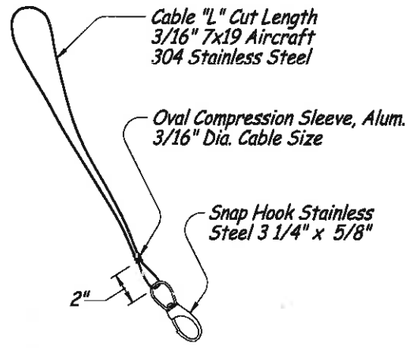




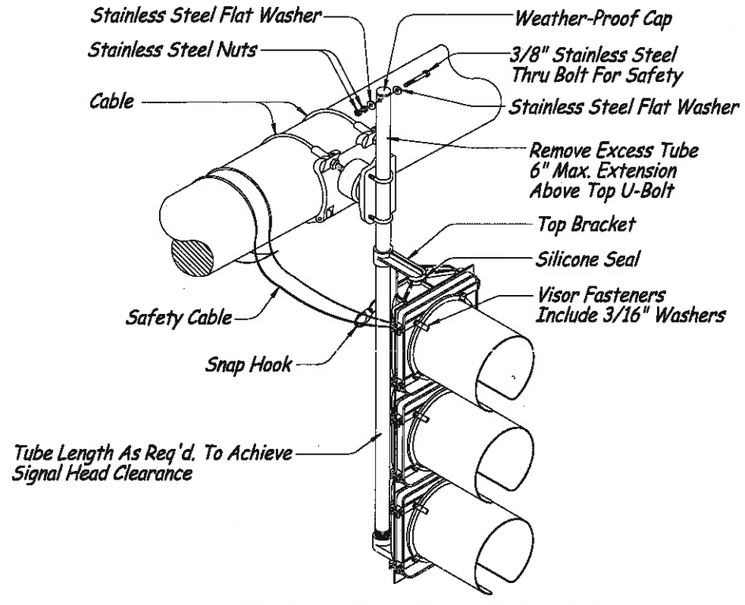
MAST ARM INSTALLATION OF ADJUSTABLE BRACKET



VEHICLE HEAD ASSEMBLY



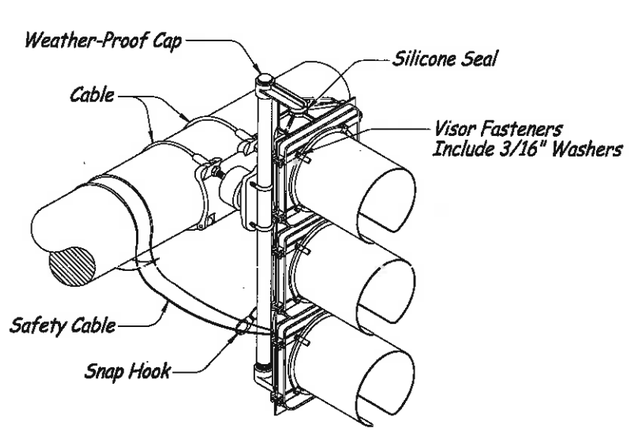
SAFETY CABLE



MOUNTING ABOVE BRACKET ARMS

NOTE:

This Detail Can Be Applied To Any Signal Head Configuration. If The Extension Between The Center Line Of The Mast Arm And The Top Bracket Exceeds 18" Consult Engineer For Guidance.

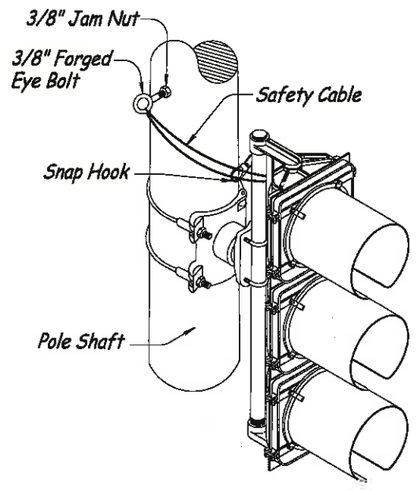


MOUNTING BETWEEN BRACKET ARMS

NOTE:

All Bolts, Nuts And Washers Shall Be Stainless Steel Unless Noted Otherwise.

See TM465 For Sign Mount Detail.



SIGNAL HEAD MOUNTING ON POLE SHAFT

Note:
Drill And Tap Pole For 3/8" Forged Eye Bolt.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

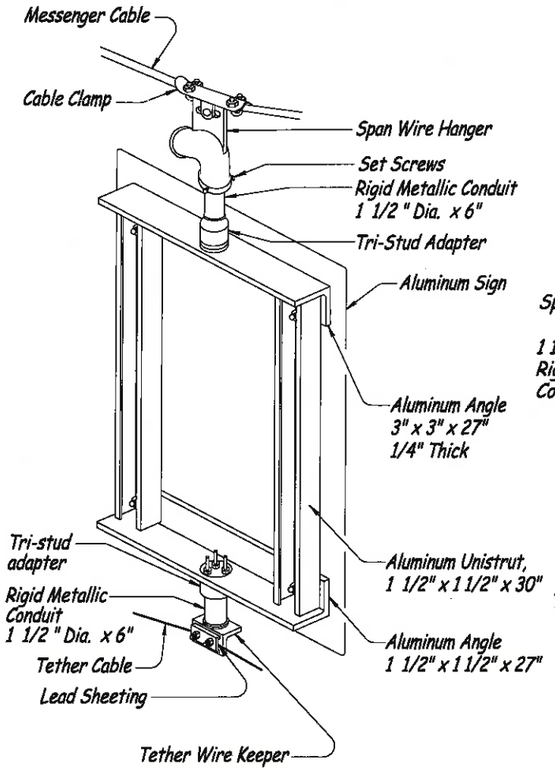
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

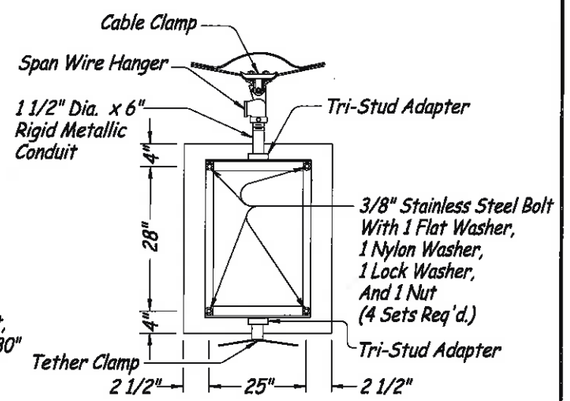
OREGON STANDARD DRAWINGS

ADJUSTABLE SIGNAL HEAD MOUNTING DETAILS

2008

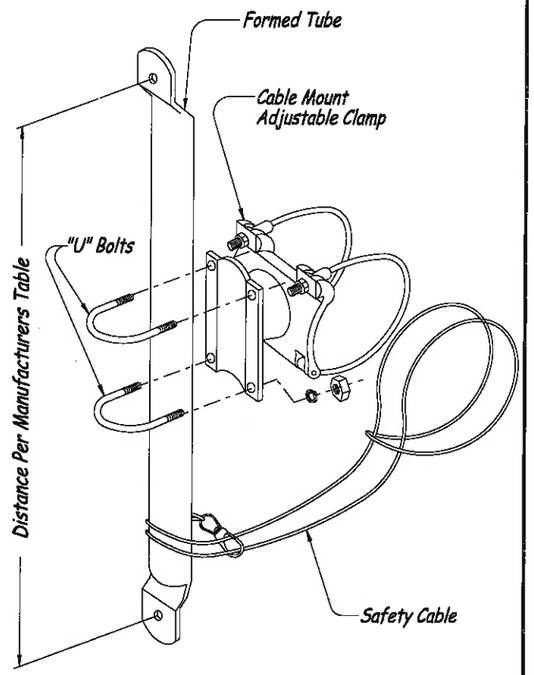
REVISIONS	
DATE	DESCRIPTION
12 - 2009	MINOR TEXT CHANGES
12 - 2012	MINOR TEXT CHANGES





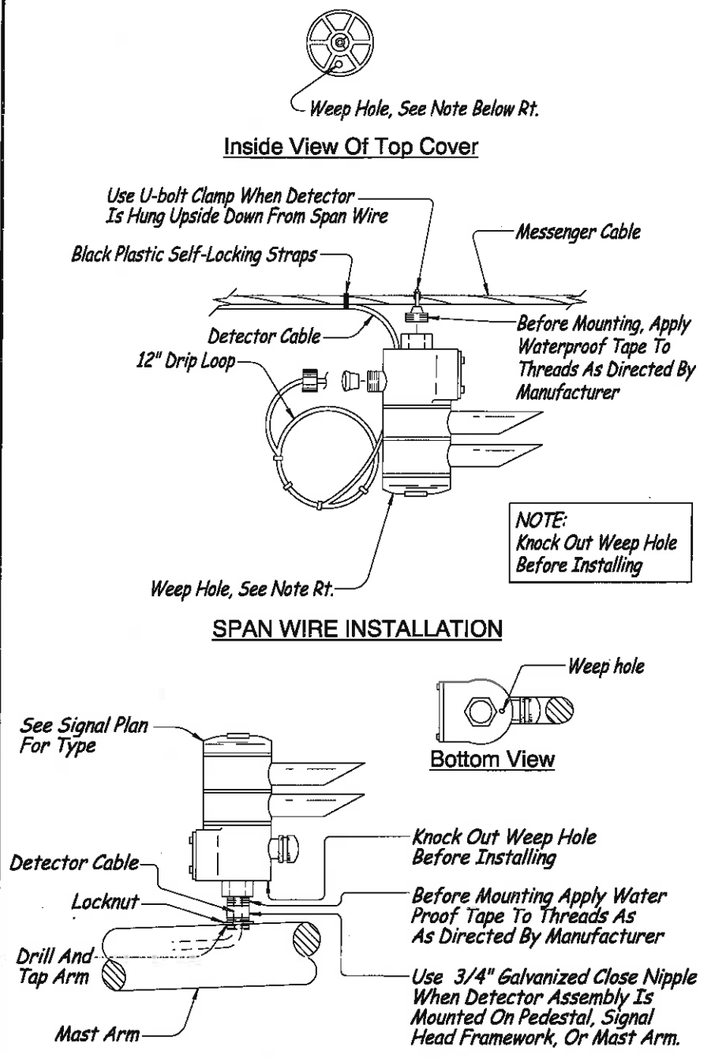
NOTE:
All Bolts, Nuts And Washers Shall Be Stainless Steel Unless Noted Otherwise.

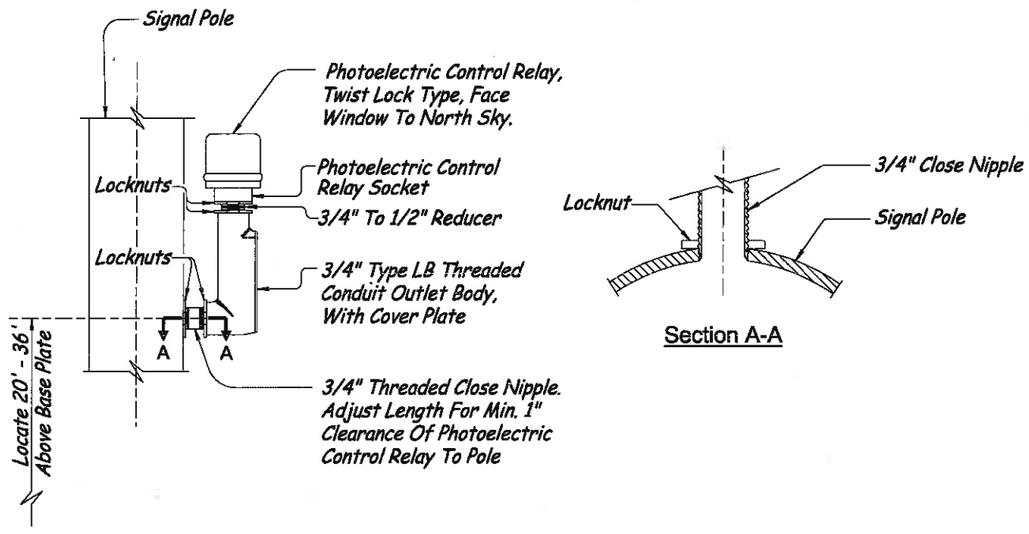
SPANWIRE MOUNTED ALUMINUM SIGNS



NOTE:
See TM462 For Details

ADJUSTABLE BRACKET SIGN MOUNT WITH FORMED TUBE





PHOTOELECTRIC CONTROL INSTALLATION FOR SIGNAL POLE

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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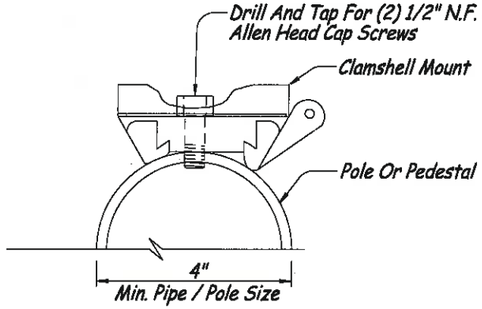
OREGON STANDARD DRAWINGS

OVERHEAD SIGN, FIRE PREEMPTION AND PHOTOELECTRIC CONTROL DETAILS

2008

REVISIONS

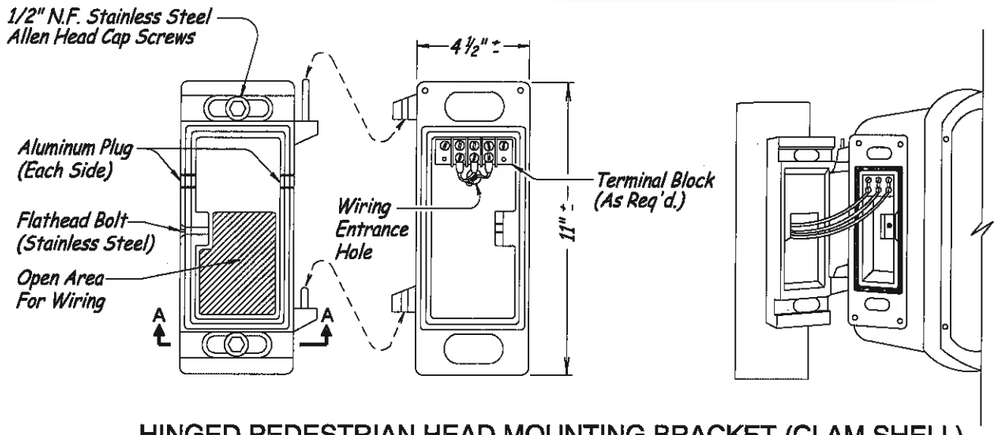
DATE	DESCRIPTION
06 - 2011	ADDED STAINLESS NOTE TO SPANWIRE MOUNT
12 - 2012	MINOR TEXT CHANGES



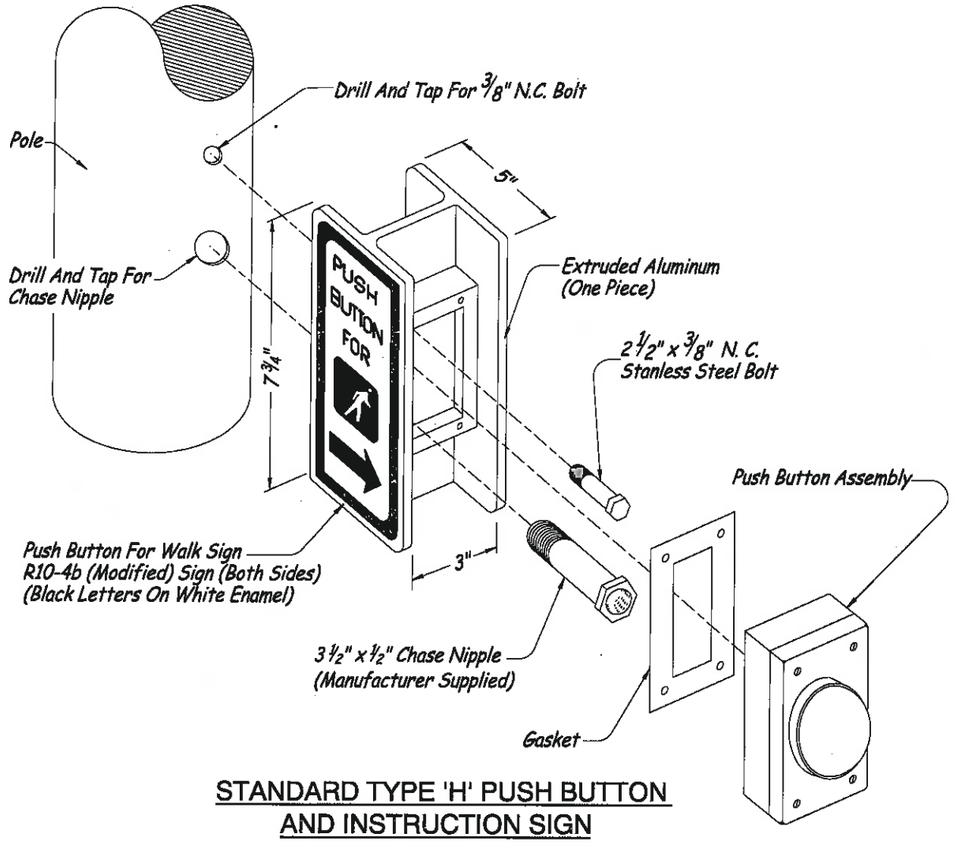
SECTION A-A

NOTES:

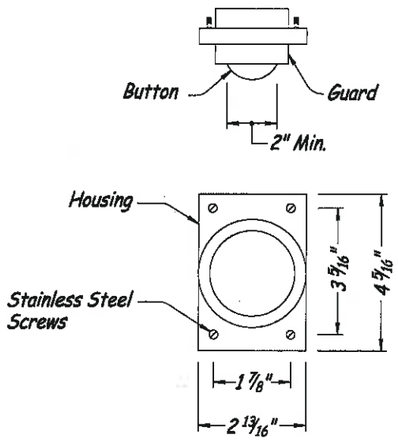
1. Where Two Heads Are Side Mounted On 4" Conduit, Proper Clearance Shall Be Maintained To Allow Legend To Be Fully Visible.
2. Clam Shells To Be Orientated So That The Heads Can Be Opened For Maintenance. (Verify Hinge Placement Of Clamshell).



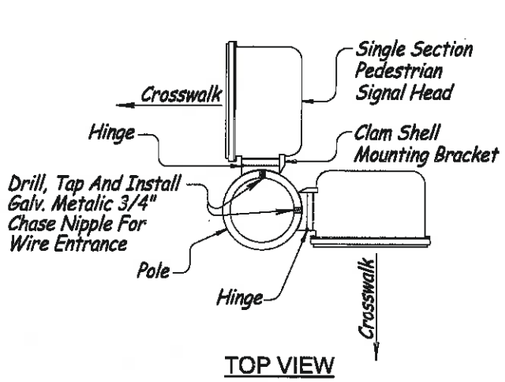
HINGED PEDESTRIAN HEAD MOUNTING BRACKET (CLAM SHELL)



STANDARD TYPE 'H' PUSH BUTTON AND INSTRUCTION SIGN



STANDARD PUSH BUTTON



TOP VIEW

Portland Orange

White

CLAM SHELL ORIENTATION

NOTE:

All Bolts, Nuts And Washers Shall Be Stainless Steel Unless Noted Otherwise.

CALC. BOOK NO. N/A	BASELINE REPORT DATE 06-30-11
ACCOMPANIED BY BASELINE REPORT	NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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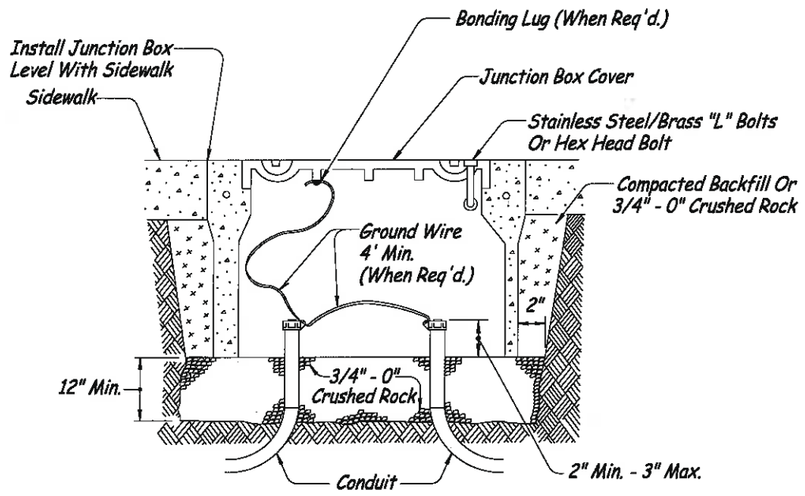
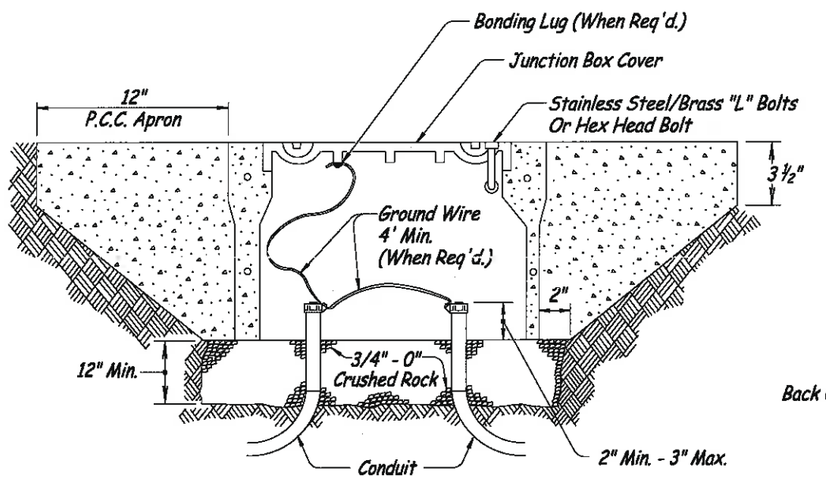
OREGON STANDARD DRAWINGS
PEDESTRIAN SIGNAL AND PEDESTRIAN PUSH BUTTON DETAILS
2008

REVISIONS	
DATE	DESCRIPTION
12-2009	MINOR TEXT AND DRAFTING REVISIONS
08-2011	MINOR TEXT REVISIONS



INSTALLATION IN SIDEWALK OR AT BACK OF CURB

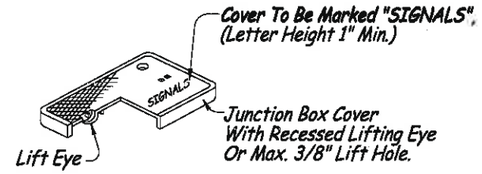


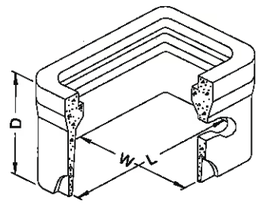
INSTALLATION WITH PORTLAND CEMENT CONCRETE APRON

(For Incidental Travel Areas Only; Gravel Shoulders, Behind Guardrail, Etc.)

NOTE:

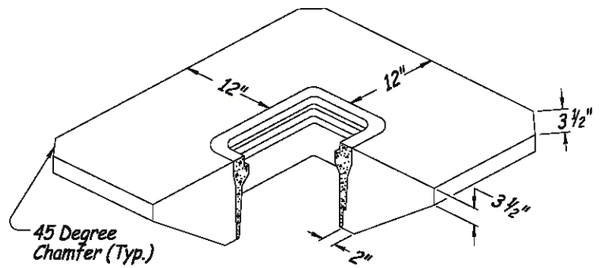
Use Stainless Steel / Brass Bolts Or Hex Head Bolts To Secure Lid.





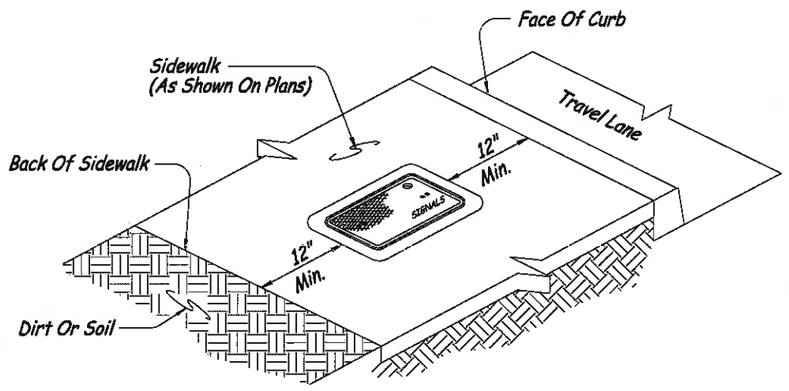
JUNCTION BOX

Not To Be Used In Travel Lanes, Shoulders Or Areas Exposed To Traffic. For Location And Junction Box Dimensions, See Plans.



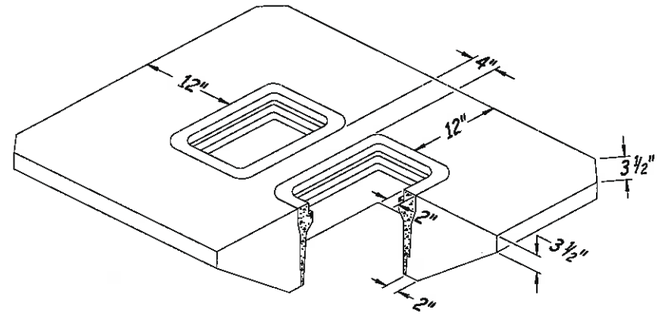
PORTLAND CEMENT CONCRETE APRON

(Approx. 7ft³ Concrete In Neat Section)



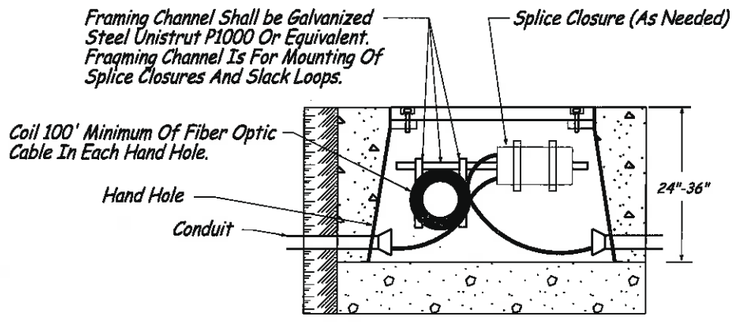
JUNCTION BOX PLACEMENT WITHIN SIDEWALKS

(Junction Boxes To Be Located Only In Flat Areas Of Sidewalks, Concrete Junction Boxes Are Not To Be Installed In Slopes Of Ramps Or Driveways)



PORTLAND CEMENT CONCRETE APRON FOR TANDEM JB/3A JUNCTION BOXES

(Approx. 10ft³ Concrete In Neat Section)



INSTALLATION OF HAND HOLE

Type	L	W	D	Type	L	W	D
JB1	17"	10"	12"	HH-1	24"	30"	24"
JB2	22"	12"	12"	HH-2	30"	48"	24"
JB3	30"	17"	12"	HH-3	30"	48"	36"

JUNCTION BOX/ HAND HOLE DIMENSION TABLE

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

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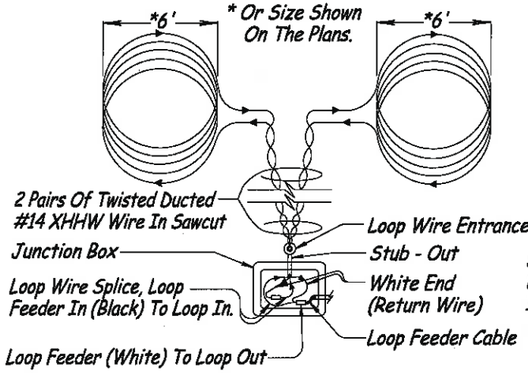
OREGON STANDARD DRAWINGS

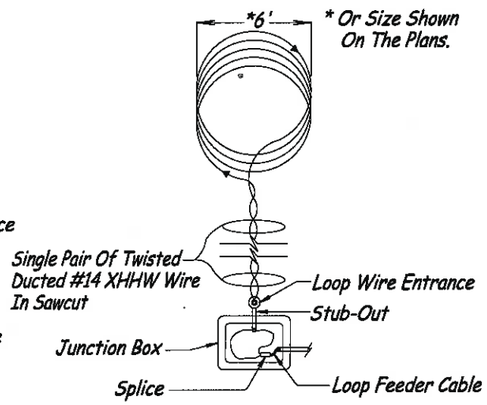
TRAFFIC SIGNAL JUNCTION BOXES/HAND HOLES

2008

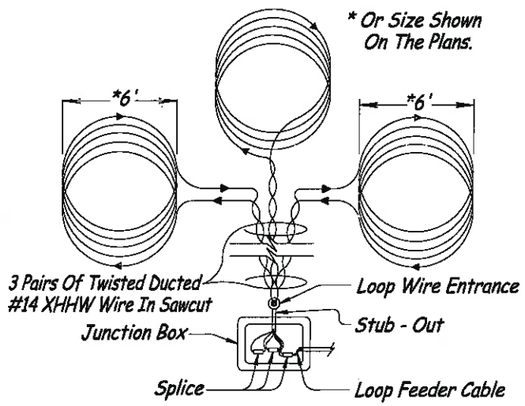
REVISIONS	
DATE	DESCRIPTION
07- 2009	ADDED A 4" SPACE BETWEEN TWIN JUNCTION BOX INSTALLATIONS
12 - 2009	CHANGED FORM HEIGHT FROM 4" TO 3½"
06 - 2011	UPDATED TEXT & DRAFTING PERTAINING TO HOLD DOWN METHOD
12 - 2012	ADDED HAND HOLE OPTION WITH DIMENSION TABLE



TWO LOOPS IN SERIES
(TYPICAL WIRING DIAGRAM)



SINGLE LOOP

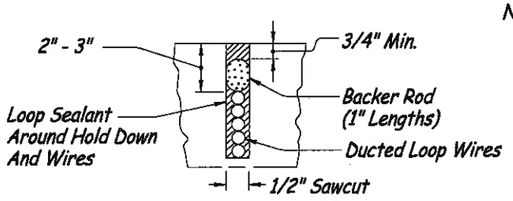


THREE LOOPS IN SERIES

LOOP DETECTOR WINDING PATTERN

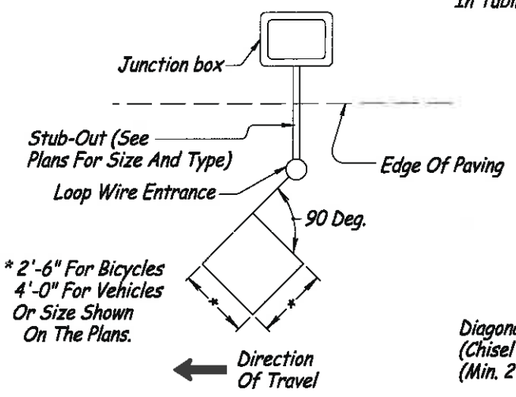
(Arrows Indicate Direction Of Loop Winding)

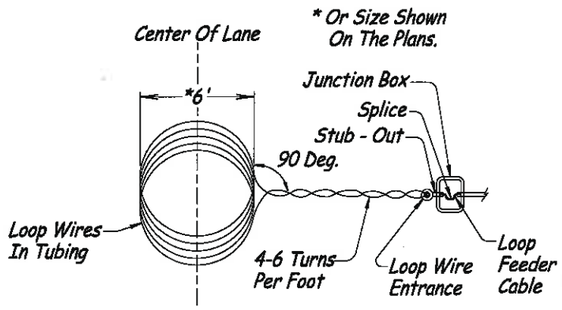
Loops Shall Be Round Or Square With 5 Turns Of Ducted No. 14 XHHW Stranded Wire Centered In The Traffic Lane Or As Shown On Plans. Loop Wire Shall Be Twisted 4 To 6 Turns Per Foot Between Loop And Junction Box. All Loops Shall Be Individually Wired As Shown.



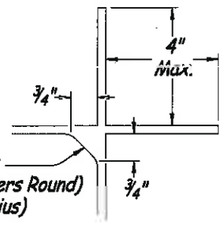
SAWCUT CROSS SECTION

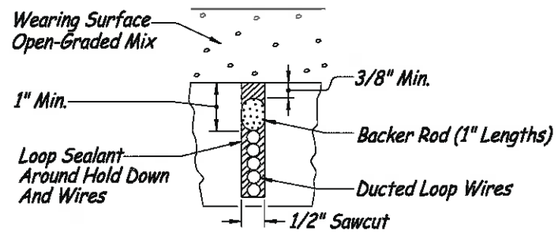
LOOP WIRE INSTALLATION IN EXISTING CONCRETE OR STANDARD ASPHALT MIXES





ROUND LOOP LAYOUT
Use Round Loop As Shown On Plans



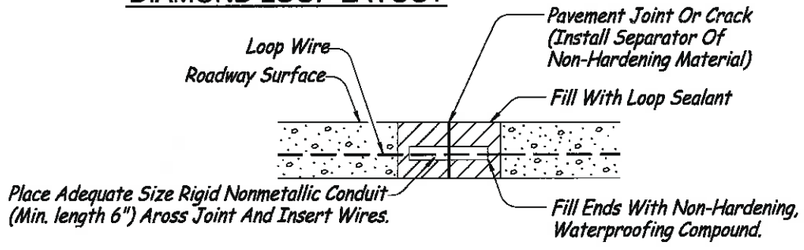


SAWCUT CROSS SECTION

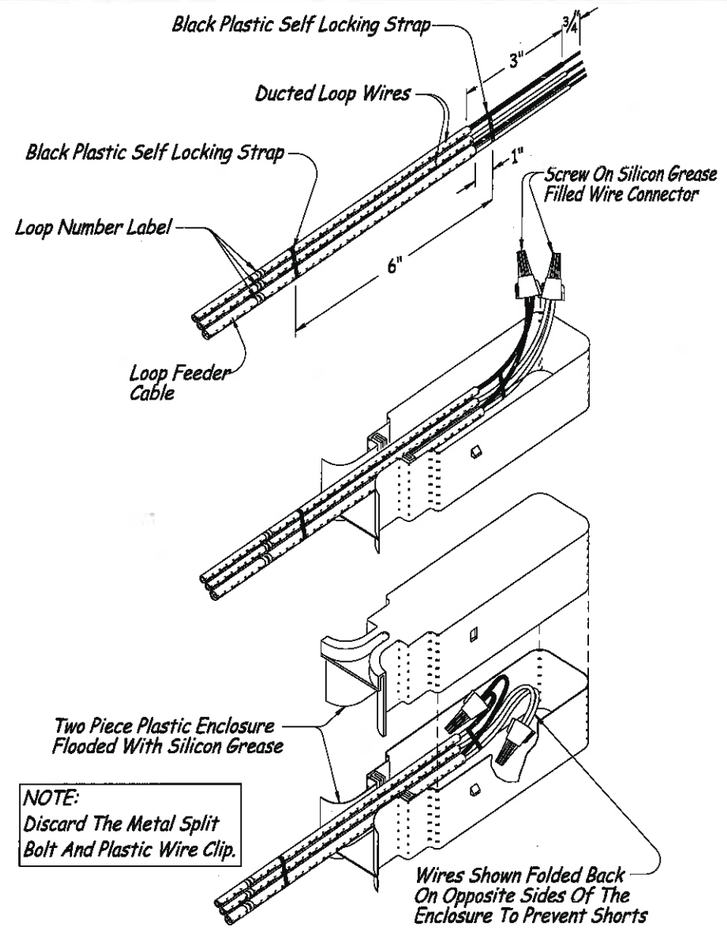
LOOP WIRE INSTALLATION IN BASE LIFT (OR AFTER GRINDING). PRIOR TO PLACEMENT OF OPEN-GRADED MIX FOR WEARING SURFACE.

(If Placed On Open-Graded Mix, Install 5/8" Deeper And Leave Loop Sealant Down 1/2 "- 5/8 " From AC Surface. DO NOT Totally Fill Saw Slot.)

DIAMOND LOOP LAYOUT



PAVEMENT JOINT AND CRACK CROSSING DETAIL



LOOP WIRE TO LOOP FEEDER SPLICES

Mark Loop Number On Loop Wire And Loop Feeder With Permanent Tags. Use Hand-held Labeler (Brady IDXPERT With XC-1500-580-WT-BK Tags, Or Approved Equal).

At Existing Installations The Contractor Is Responsible For Re-wiring And Re-numbering Of New And Existing Detector Loops And Loop Feeders, In JunctionBoxes And Cabinet, To Match Wiring Diagram.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

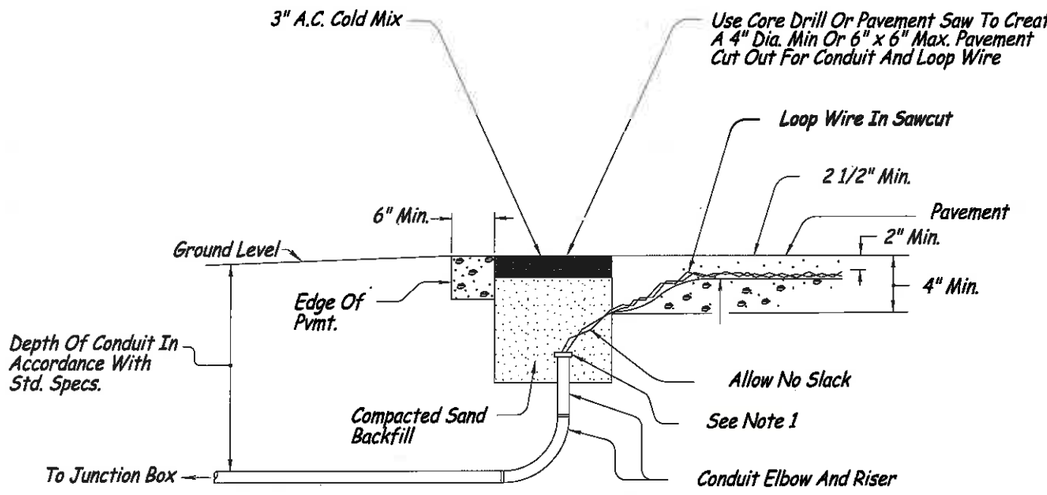
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

LOOP DETAILS

2008

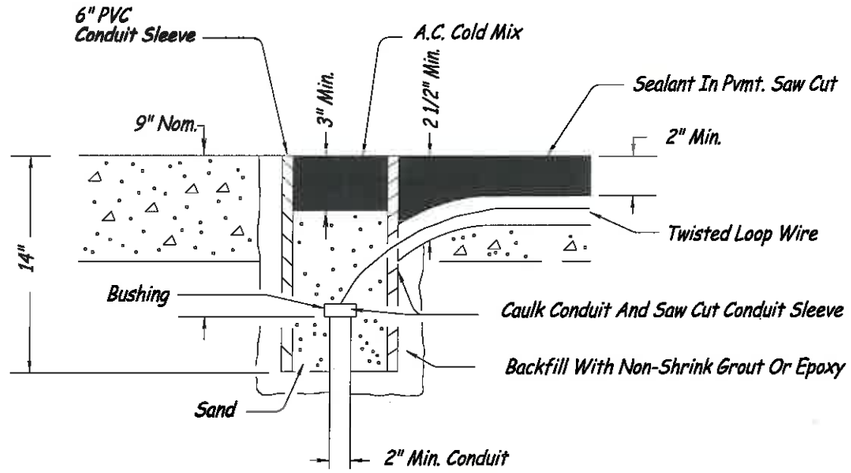
REVISIONS	
DATE	DESCRIPTION
12 - 2009	CHANGED BACKER ROD LENGTH FROM 1" TO 1"
06 - 2011	UPDATED DIAMOND LOOP TO REFERENCE BICYCLES & VEHICLES
12 - 2011	MINOR TEXT REVISION
12 - 2012	UPDATED NUMBER OF TURNS TO 5, UPDATED LOOP & FEEDER TAGS



UNCURBED SECTION

On Monolithic Curbs, Locate Loop Entrance In Pavement At The Edge Of Concrete Gutter (All Other Notes Apply As Above)

SAND POCKET OPTION



PVC CONDUIT OPTION

LOOP WIRE ENTRANCES

SAND POCKET OPTION OR P.V.C. CONDUIT INTALLATION NOTES:

1.) Install Conduit Plug To Each End Of Conduit Before Installing Sand And A.C.

2.) Elbows And Risers For Conduit Back Into The First Junction Box May Be Any Rigid Non-Metallic Conduit.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

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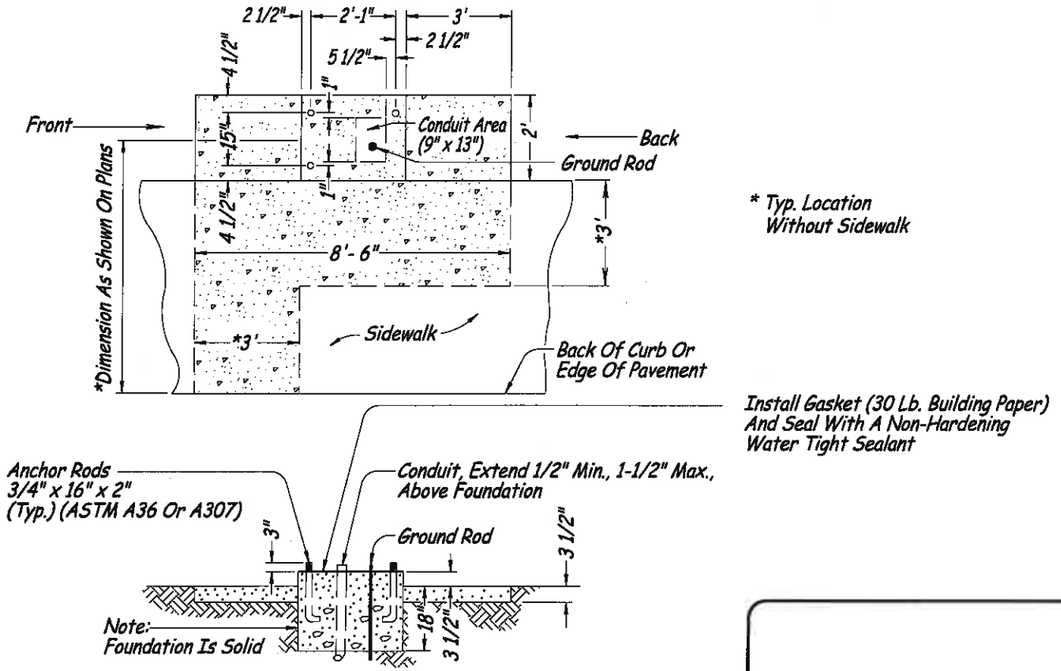
OREGON STANDARD DRAWINGS

LOOP ENTRANCE DETAILS

2008

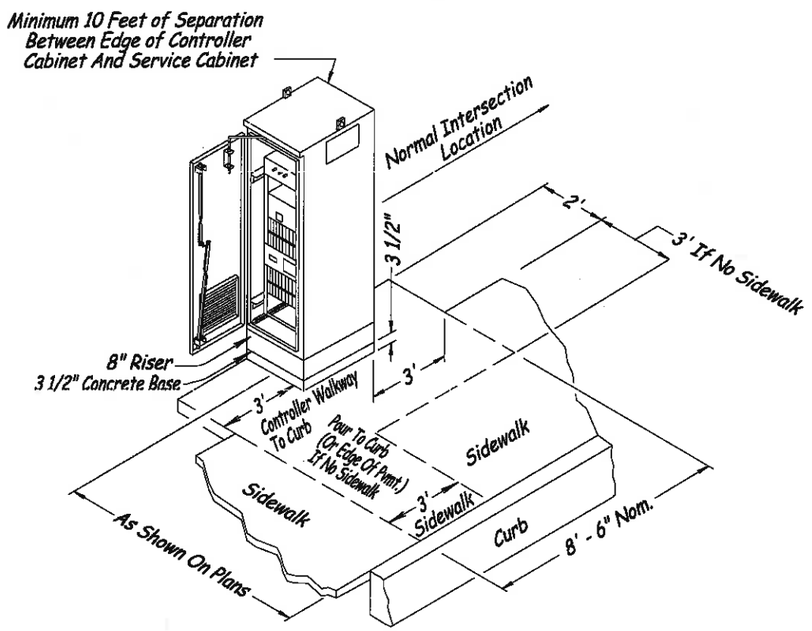
REVISIONS	
DATE	DESCRIPTION
12 - 2009	CHANGED FROM 10 WIRES IN THE LOOP ENTRANCE TO 8 WIRES
06 - 2011	MOVED JUNCTION BOXES PORTIONS TO STANDARD DETAIL 4434
12 - 2012	UPDATED COLD MIX TO 3 INCHES THICK, UPDATED NOTES



* Typ. Location Without Sidewalk

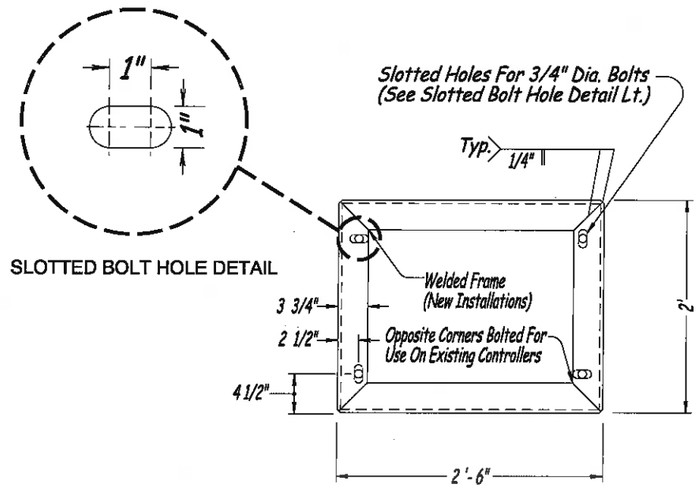
CABINET FOUNDATION DETAIL

(Model 332, 334, And 340 Cabinets)

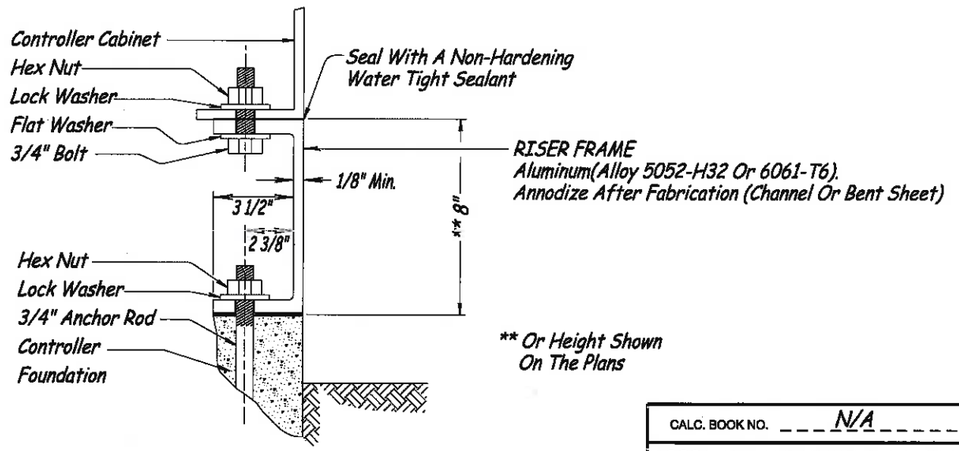


CABINET SITE LAYOUT

(Model 332, 334, And 340 Cabinets)



RISER FRAME



RISER FRAME CONNECTION DETAIL

332, 334, AND 340 CABINET RISER FRAME

GENERAL NOTES:

Separate The Controller Cabinet And The Service Cabinet By 10 Feet Or More.

All Surface Joints Where Concrete And Aluminum Meet Shall Be Gasketed With 30 Lb. Building Paper.

All Bolts, Nuts And Washers Shall Be Galvanized Steel Unless Noted Otherwise.

Stainless Steel Or Galvanized Steel May Be Used For Mounting Cabinet To Riser Frame.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

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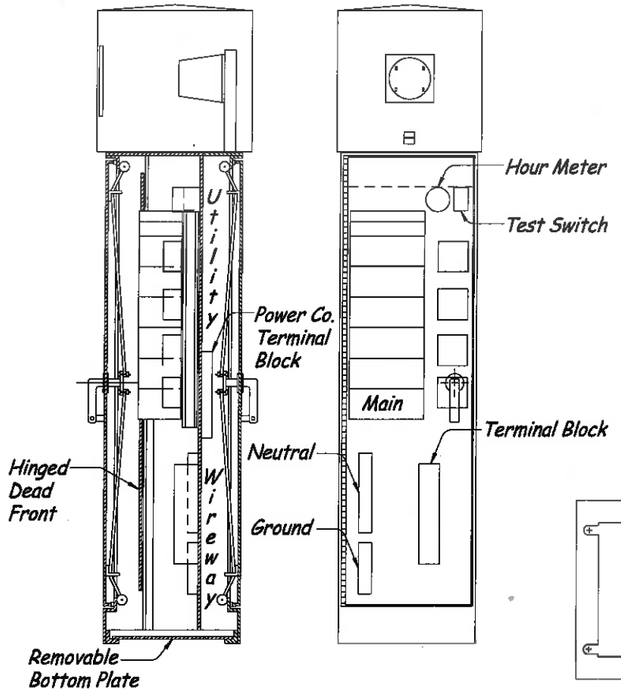
OREGON STANDARD DRAWINGS

CONTROLLER CABINET AND FOUNDATION DETAILS

2008

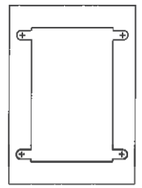
REVISIONS

DATE	DESCRIPTION
12 - 2009	CHANGED ANCHOR BOLT TO ANCHOR ROD
06 - 2011	MOVED BOLTED RISER FRAME TO STANDARD DETAIL 4430
12 - 2011	MINOR TEXT REVISIONS
12 - 2012	ADDED MINIMUM SPACING BETWEEN CONTROLLER CABINET & BMC

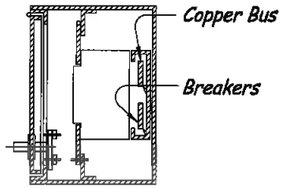


SIDE VIEW FRONT VIEW

BASE MOUNTED SERVICE & CONTROL CABINET WITH METER

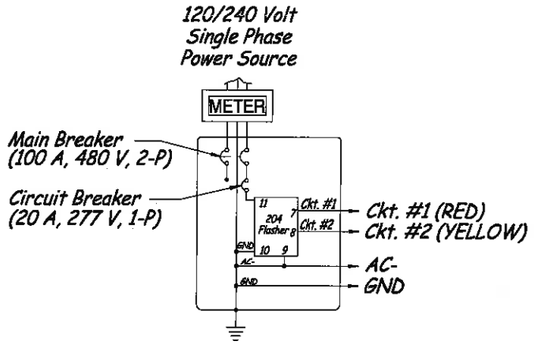


BASE MOUNTING

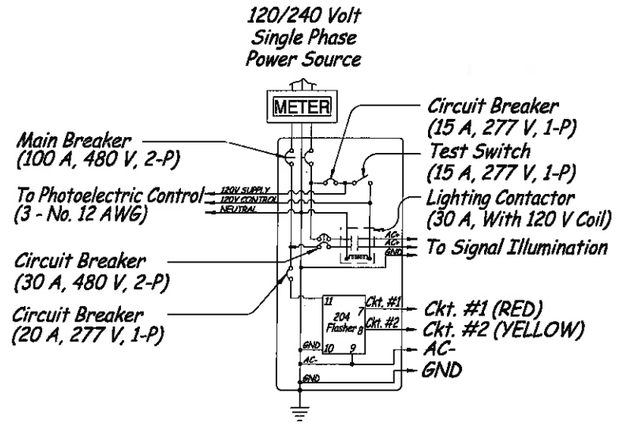


HORIZONTAL SECTION

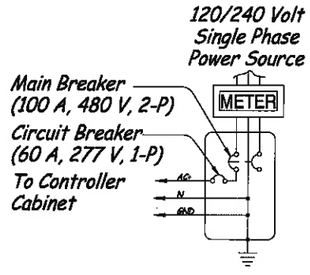
BASE MOUNTED SERVICE & CONTROL CABINET WITHOUT METER



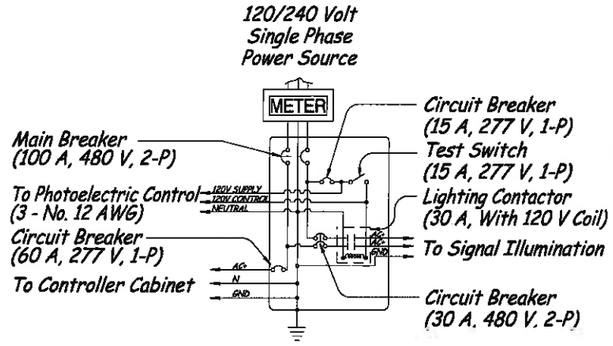
SERVICE CABINET WIRING WITH FLASHER BMCF



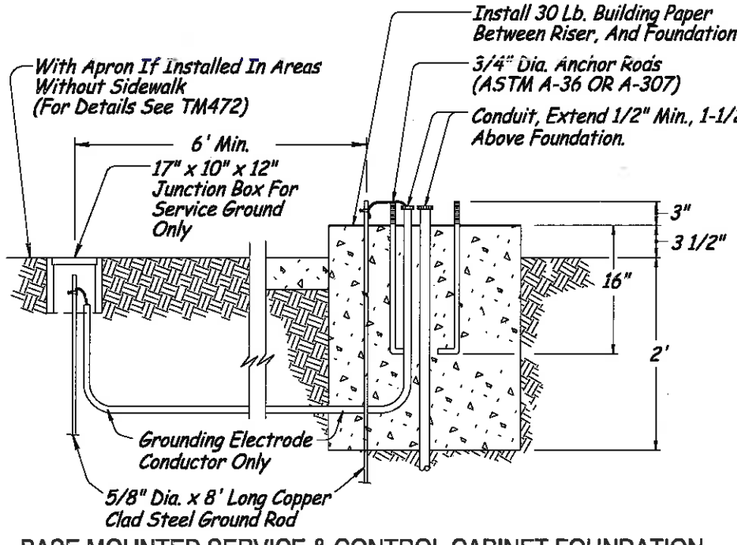
SERVICE CABINET WIRING WITH FLASHER & 240 VOLT ILLUMINATION BMCFL



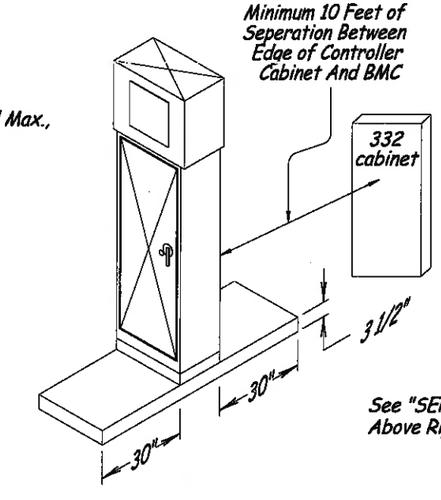
SERVICE CABINET WIRING FOR 120/240 VOLT SIGNAL SERVICE BMC



SERVICE CABINET WIRING WITH 240 VOLT ILLUMINATION BMCL



BASE MOUNTED SERVICE & CONTROL CABINET FOUNDATION



BASE MOUNTED CABINET FOUNDATION WITH LANDINGS

See "SERVICE CABINET WIRING" Details Above Right For Signal And Flasher Wiring

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-31-12

ACCOMPANIED BY BASELINE REPORT

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SERVICE CABINETS AND SERVICE CABINET WIRING DETAILS

2008

REVISIONS

DATE	DESCRIPTION
12 - 2009	CHANGED ANCHOR BOLT TO ANCHOR ROD
08 - 2011	REMOVED 2ND JUNCTION BOX, PUT GROUND ROD IN FOUNDATION
12 - 2011	MINOR TEXT REVISION
12 - 2012	UPDATED SERVICE CABINET WIRING, MINOR TEXT REVISIONS

TM500.dgn 07-05-2013

W

4" WHITE LINE

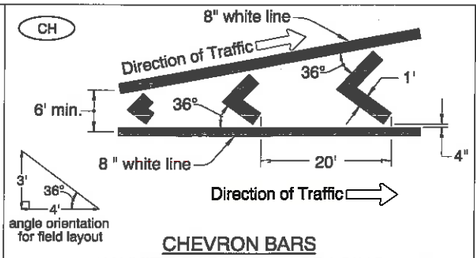
W-2

8" WHITE LINE

Y

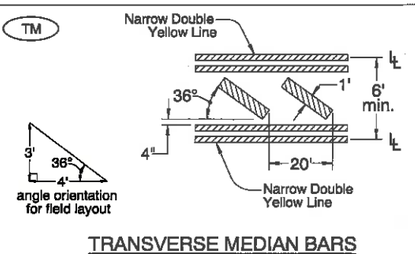
4" YELLOW LINE

CH



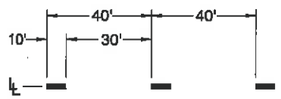
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



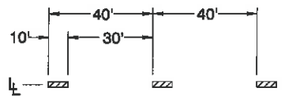
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



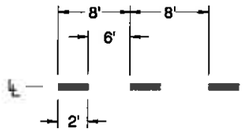
4" WHITE BROKEN LINE

YB



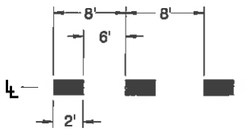
4" YELLOW BROKEN LINE

WD



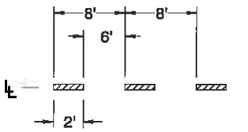
4" WHITE DOTTED LINE
For lane extensions

WD-2



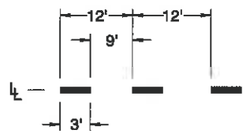
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



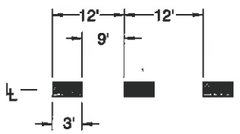
4" YELLOW DOTTED LINE
For lane extensions

DLL



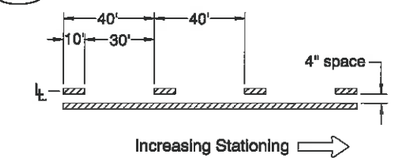
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



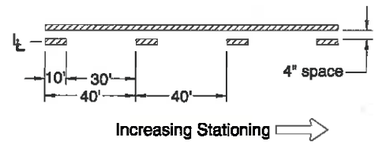
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



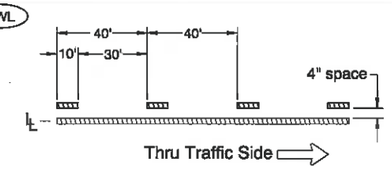
NO-PASS RIGHT
4" YELLOW LINES

NPL



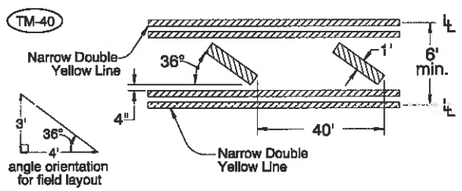
NO-PASS LEFT
4" YELLOW LINES

TWL



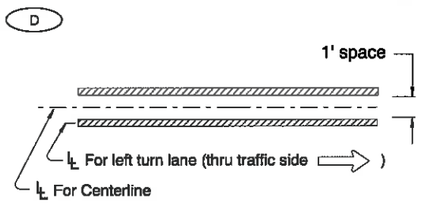
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



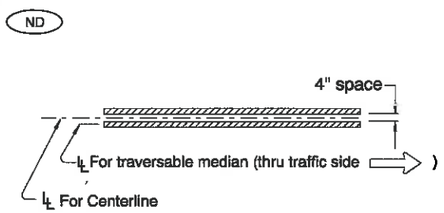
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where distance between left turn refuges exceeds 200'

D



DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND

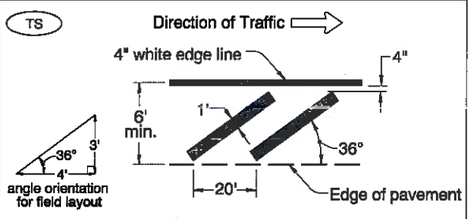


NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW

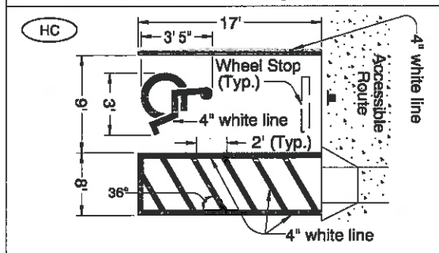
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



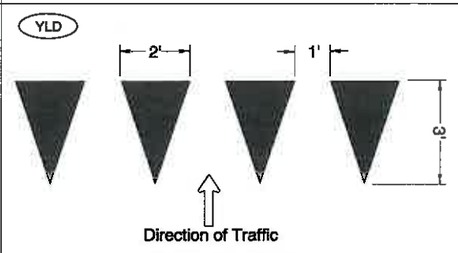
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



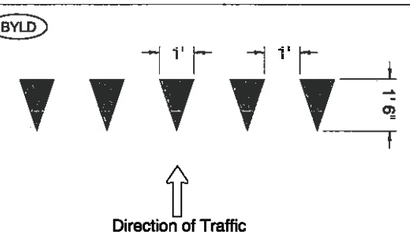
DISABLED PARKING DETAIL (white)

YLD



YIELD LINE (white)

BYLD



BIKE PATH YIELD LINE (white)

LEGEND

⇦ Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

℄ — Lane line dimensions are shown on the striping plans

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12/19/2012

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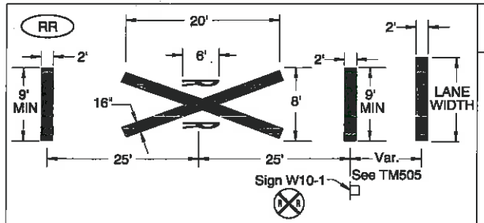
OREGON STANDARD DRAWINGS

PAVEMENT MARKING
STANDARD DETAIL BLOCKS
2008

DATE	REVISION DESCRIPTION
12/2010	Added new line type DLL and renamed LD line to DLL-2.
7/2011	Modified lane line for ND. Corrected height of the BYLD.
12/2011	Added note for DLL. Deleted sign numbers from HC. Revised graphics for CH, TM, DLL, DLL-2, TM-40, and HC.
12/2012	Corrected typo.

TM500

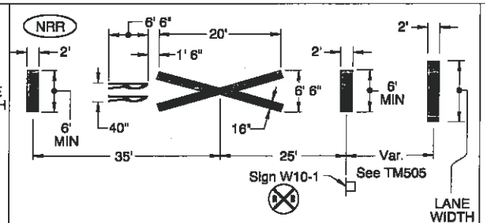
RR



RAILROAD CROSSING (white)

Install per ODOT Rail Crossing Order or as shown.
For letter proportion details, see current version of Standard Highway Signs

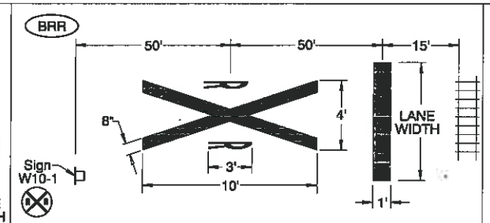
NRR



NARROW RAILROAD CROSSING (white)

Install per ODOT Rail Crossing Order or as shown.
For letter proportion details, see current version of Standard Highway Signs

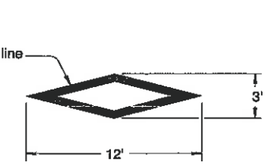
BRR



BIKE PATH RAILROAD CROSSING (white)

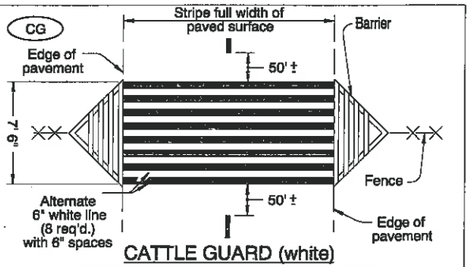
Install per ODOT Rail Crossing Order or as shown.
For letter proportion details, see current version of Standard Highway Signs

HOV



HIGH-OCCUPANCY VEHICLE DIAMOND DETAIL (white)

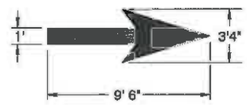
CG



CATTLE GUARD (white)

For barrier and fence details, see Std. Dwg. RD110

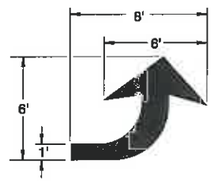
SA



STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

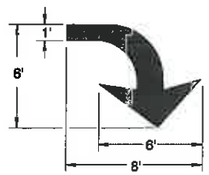
LA



LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

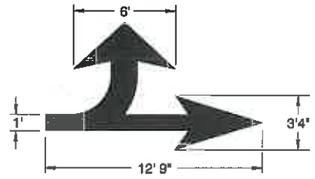
RA



RIGHT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

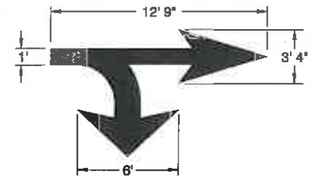
LSA



LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

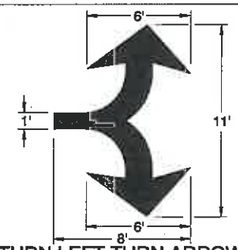
RSA



RIGHT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

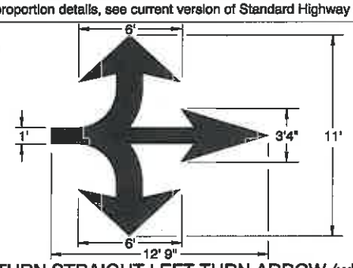
RALA



RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

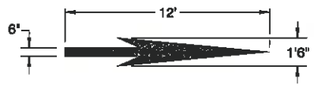
RSLA



RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

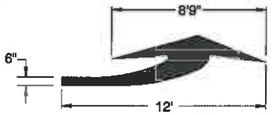
E-SA



ELONGATED STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

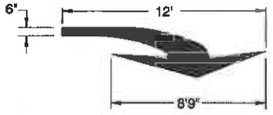
E-LA



ELONGATED LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

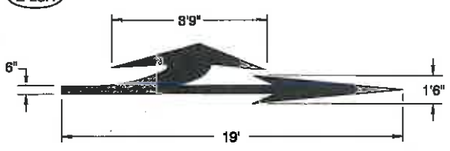
E-RA



ELONGATED RIGHT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

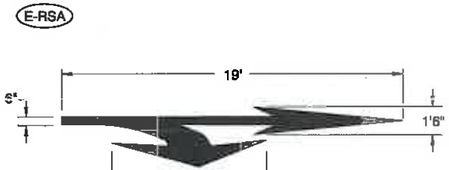
E-LSA



ELONGATED LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

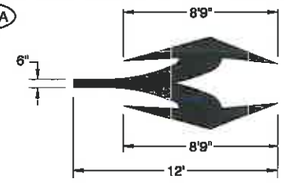
E-RSA



ELONGATED RIGHT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

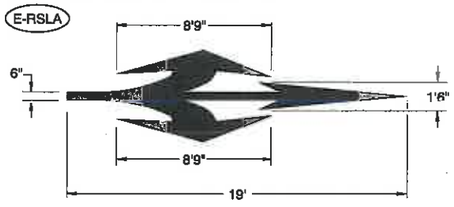
E-RALA



ELONGATED RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

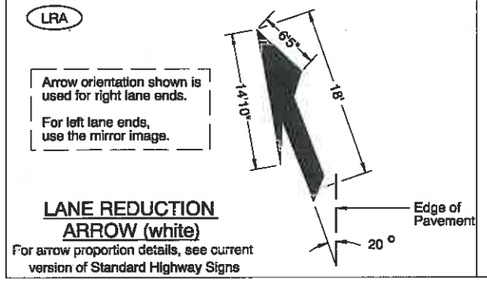
E-RSLA



ELONGATED RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

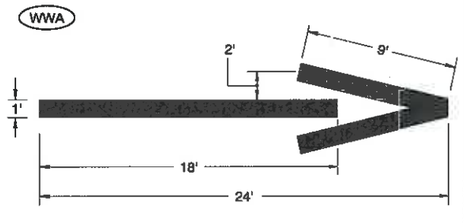
LRA



LANE REDUCTION ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

WWA



WRONG-WAY ARROW (white)

General Note:

1. Center pavement markings within the lane width.
2. Arrow and letter dimensions nominal, excluding WWA.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12/16/2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2008

DATE	REVISION DESCRIPTION
1/2009	Additional dimensions added to arrow detail blocks. Modified CG.
12/2010	Corrected the dimension of the arrow head on the left side of LRA.
12/2011	Deleted direction of traffic arrow for HOV. Deleted Legend.

TM501.dgn 07-05-2013

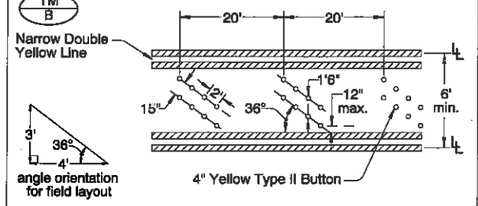
TM501

R:\SIGNING-STRIPING\PAVEMENT MARKINGS\STANDARD DRAWINGS\13 Jul\plotfile_TM500s.dgn :: Default 6/26/2013 7:56:28 AM hwyr30c

Effective Date: December 1, 2013 - May 31, 2014

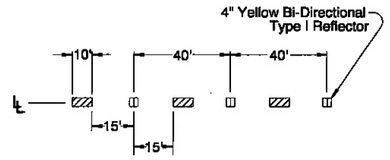
TM502.dgn 07-05-2013

TM 8



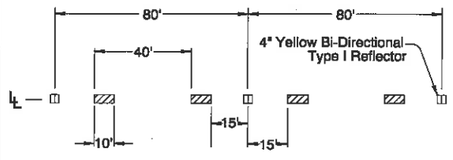
TRANSVERSE MEDIAN BAR SUBSTITUTION BUTTON

YB R-40



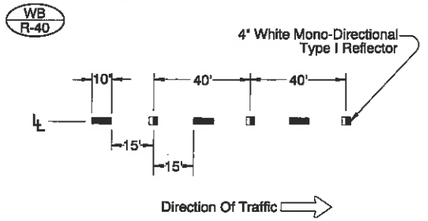
YELLOW BROKEN LINE SUPPLEMENTATION REFLECTORS WITH 4" YELLOW BROKEN LINE

YB R-80



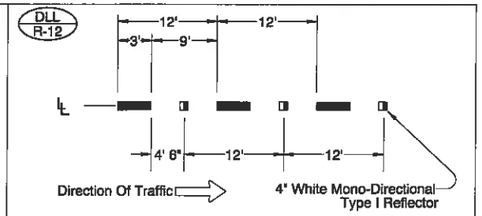
YELLOW BROKEN LINE SUPPLEMENTATION REFLECTORS WITH 4" YELLOW BROKEN LINE

WB R-40



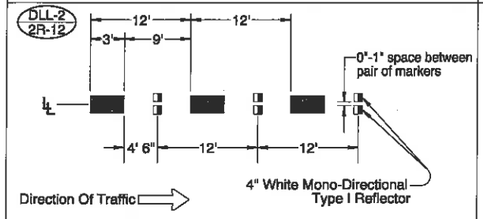
WHITE BROKEN LINE SUPPLEMENTATION REFLECTORS WITH 4" WHITE BROKEN LINE

DLL R-12



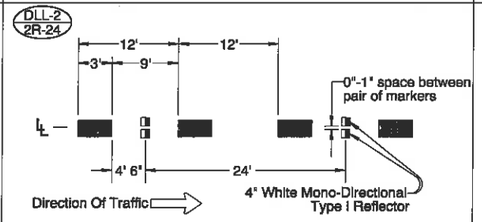
WHITE DOTTED LANE LINE SUPPLEMENTATION REFLECTORS WITH 4" WHITE DOTTED LANE LINE

DLL-2 2R-12



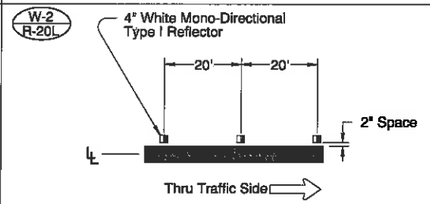
WIDE DOTTED LANE LINE SUPPLEMENTATION REFLECTORS WITH 8" WHITE DOTTED LANE LINE

DLL-2 2R-24



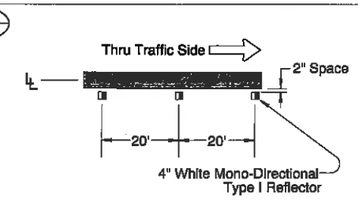
WIDE DOTTED LANE LINE SUPPLEMENTATION REFLECTORS WITH 8" WHITE DOTTED LANE LINE

W-2 R-20L



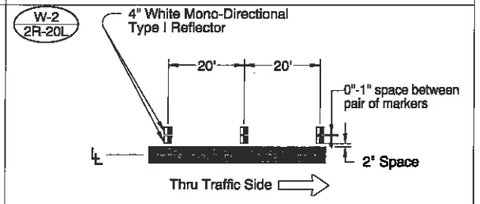
CHANNELIZING LINE POSITIONING GUIDE REFLECTORS WITH 8" WHITE LINE

W-2 R-20R



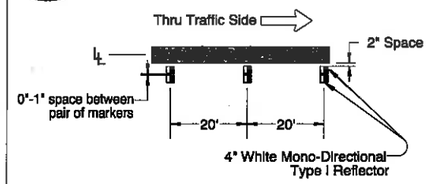
CHANNELIZING LANE LINE POSITIONING GUIDE REFLECTORS WITH 8" WHITE LINE

W-2 2R-20L



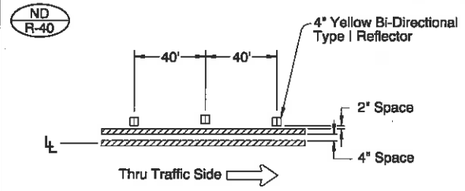
CHANNELIZING LINE SUPPLEMENTATION REFLECTORS WITH 8" WHITE LINE

W-2 2R-20R



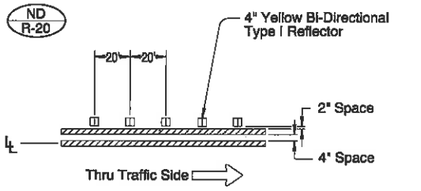
CHANNELIZING LINE SUPPLEMENTATION REFLECTORS WITH 8" WHITE LINE

ND R-40



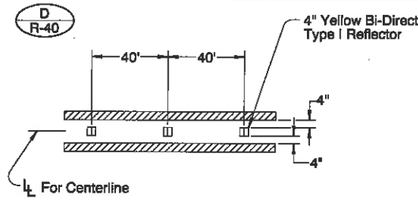
NARROW DOUBLE YELLOW POSITIONING GUIDE REFLECTORS WITH TWO 4" YELLOW LINES

ND R-20



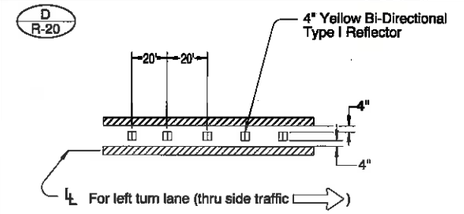
NARROW DOUBLE YELLOW POSITIONING GUIDE REFLECTORS WITH TWO 4" YELLOW LINES

D R-40



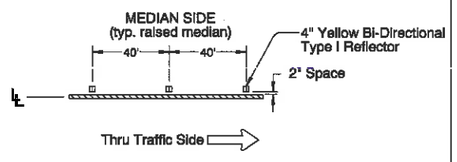
DOUBLE NO-PASS POSITIONING GUIDE REFLECTORS WITH TWO 4" YELLOW LINES

D R-20



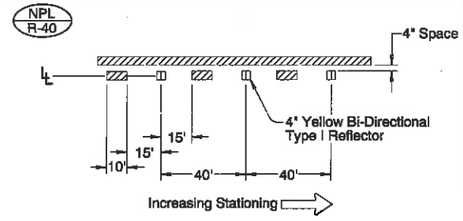
DOUBLE NO-PASS POSITIONING GUIDE REFLECTORS WITH TWO 4" YELLOW LINES

Y R-40



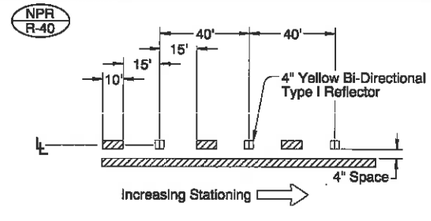
YELLOW LINE POSITIONING GUIDE REFLECTORS WITH 4" YELLOW LINE

NPL R-40



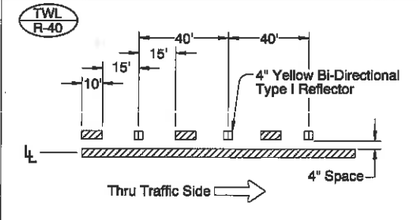
NO-PASS LEFT POSITIONING GUIDE REFLECTORS WITH 4" YELLOW LINES

NPR R-40



NO-PASS RIGHT POSITIONING GUIDE REFLECTORS WITH 4" YELLOW LINES

TWL R-40



TWO WAY LEFT TURN POSITIONING GUIDE REFLECTORS WITH 4" YELLOW LINES

General note:

1.) Surface mount Raised Pavement Markers (RPMs) unless otherwise specified.

LEGEND

- Direction Of Travel, Increasing Stationing or Thru Traffic Side
- ℄ — Lane line dimensions are shown on the striping plans
- Mono-directional crystal white marker reflects white to the left in this symbol
- Bi-directional yellow marker reflects yellow both left and right in this symbol

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12/16/2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2008

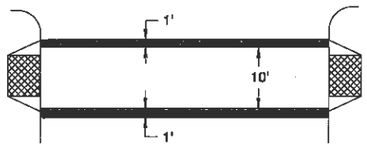
DATE	REVISION DESCRIPTION
12/2010	Added detail block for DLL/R-12 and renamed LD/R-12 to DLL-2/R-12.
7/2011	Added detail block for DLL-2/R-24.
12/2011	Added detail blocks for W-2/R-20R, W-2/2R-20L, and W-2/2R-20R.
	Renamed W-2/R-20 to W-2/R-20L, DLL-2/R-12 to DLL-2/2R-12,
	and DLL-2/R-24 to DLL-2/2R-24.

TM502

R:\SIGNING-STRIPING\PAVEMENT MARKINGS\STANDARD DRAWINGS\13 Jul\plotfile_TM500s.dgn :: Default 6/26/2013 7:56:28 AM hwyr30c

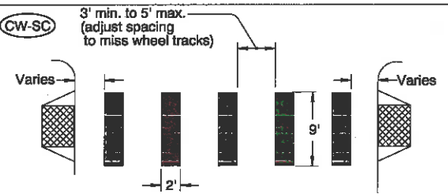
Effective Date: December 1, 2013 - May 31, 2014

CW



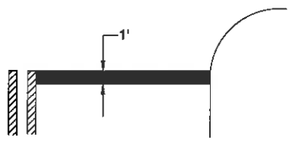
STANDARD CROSSWALK
TWO 1' WHITE BARS
Install per Standard Drawing TM530

CW-SC



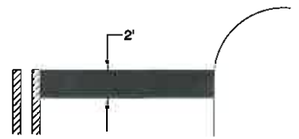
STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS
Install per Standard Drawing TM530

S



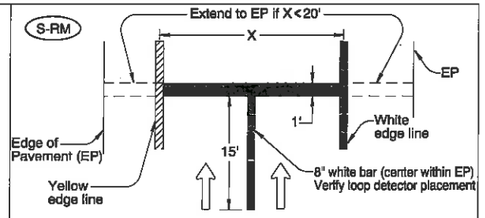
STOP BAR
1' WHITE BAR
Install per Standard Drawing TM530

S-2



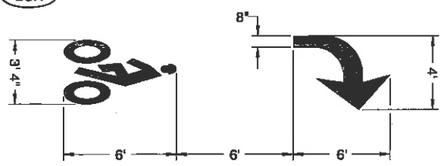
STOP BAR - LARGE
2' WHITE BAR
Install per Standard Drawing TM530

S-RM



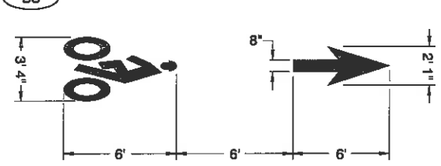
RAMP METER STOP BAR
1' & 8" WHITE BARS
For multi-lane ramp meter applications

BSR



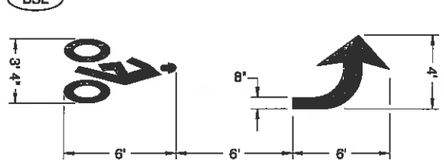
BIKE RIGHT TURN STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BS



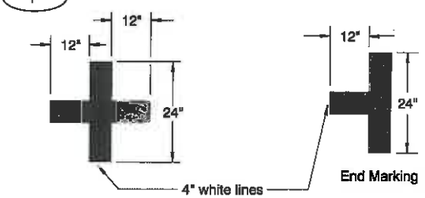
BIKE LANE STANDARD STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

BSL



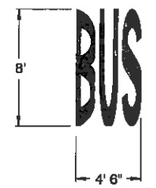
BIKE LEFT TURN STENCIL (white)
Center marking within lane width
For proportion details, see current version of Standard Highway Signs

P



ON-STREET PARKING DETAIL (white)

BUS

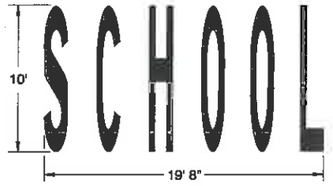


BUS (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

SCH

SCHOOL (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

SCH-LG



SCHOOL - LARGE (white)
Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

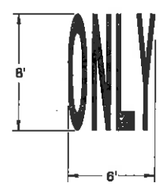
CRS-LG

CROSSING - LARGE (white)
Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

XNG

X-ING (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

ON



ONLY (white)
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

General Note:

1. Arrow, letter, and bike symbol dimensions nominal.

LEGEND

⇦ Direction of Travel

CALC. BOOK NO. N/A

BASELINE REPORT DATE 7/6/2009

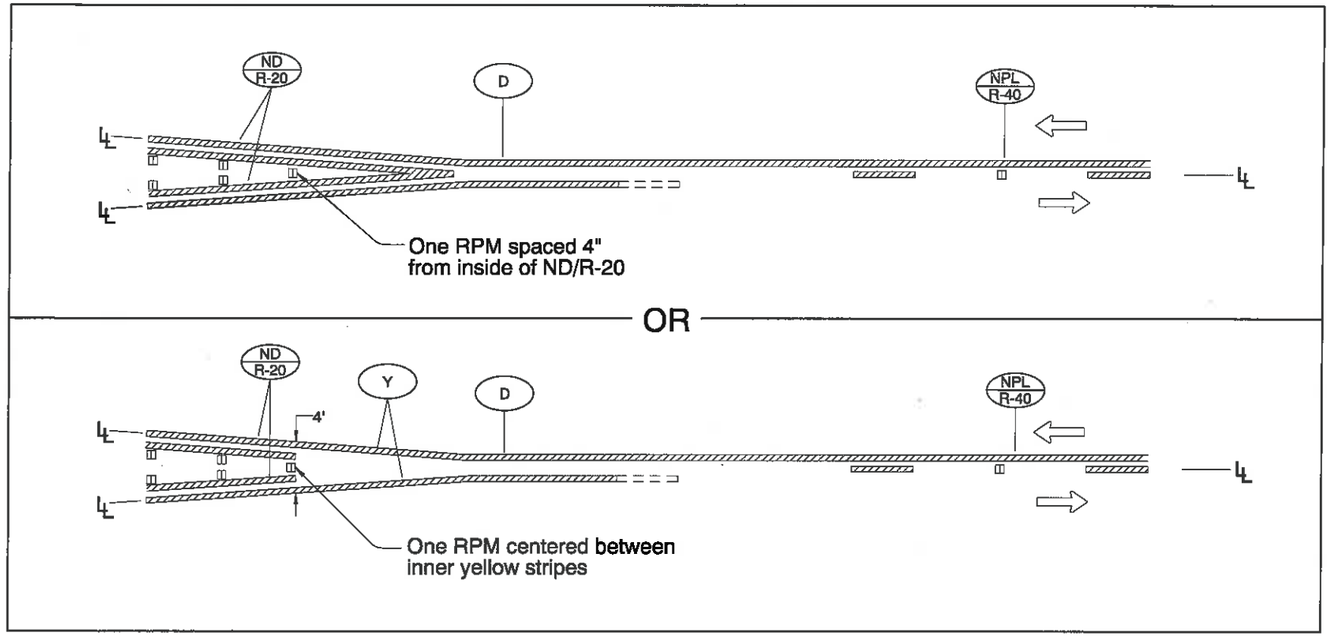
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING
STANDARD DETAIL BLOCKS
2008

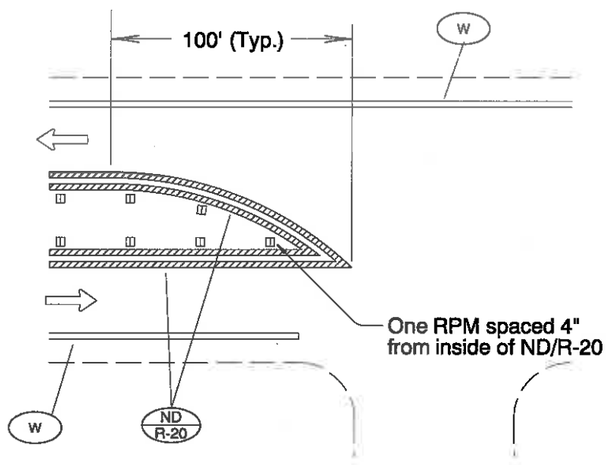
DATE	REVISION DESCRIPTION
1/2009	Modified S-RM detail block.
7/2009	Added general note 1



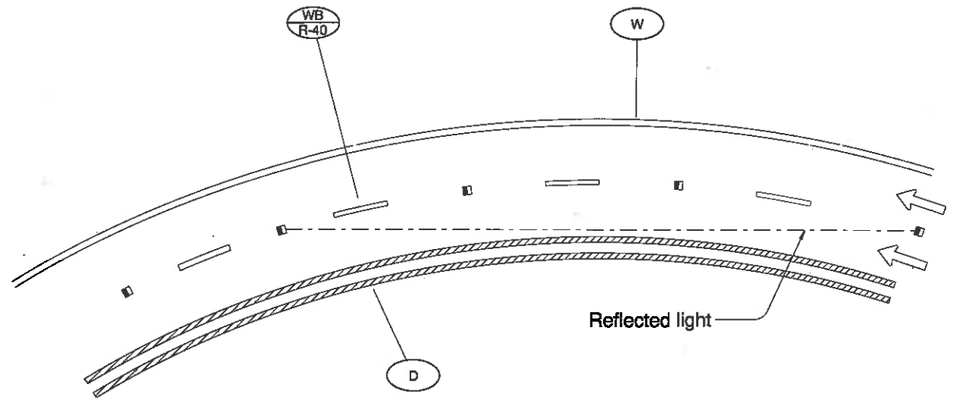
MEDIAN WIDTH TRANSITION

(TWO NARROW DOUBLE YELLOW LINES TO ONE-DIRECTION NO-PASSING LINE)

(Refer to TM539 for additional details)



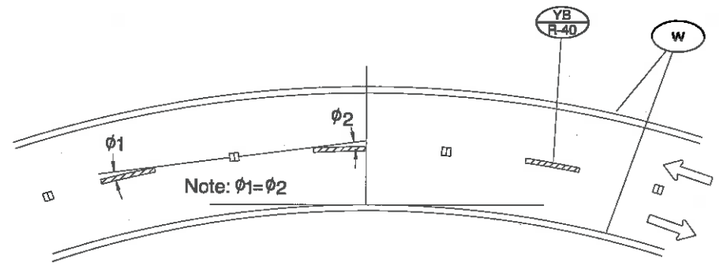
MEDIAN BULLNOSE DETAIL



NOTE:

On one way sections the marker shall be installed with the reflective surface aimed to direct the reflected light back three markers.

(a) PAVEMENT MARKER INSTALLATION FOR MONO-DIRECTIONAL RAISED PAVEMENT MARKERS



(b) PAVEMENT MARKER INSTALLATION FOR BI-DIRECTIONAL RAISED PAVEMENT MARKERS

PAVEMENT MARKER INSTALLATION ON HORIZONTAL CURVES

LEGEND

- Mono-Directional White (marker reflects white to left in this symbol)
- Bi-Directional Yellow (marker reflects yellow to both the left and right in this symbol)
- Increasing stationing from left to right
- ⇦ Direction of Travel
- ℄ — Lane line dimensions are shown on the striping plans.

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. _____ BASELINE REPORT DATE January 7, 2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PAVEMENT MARKERS

2008

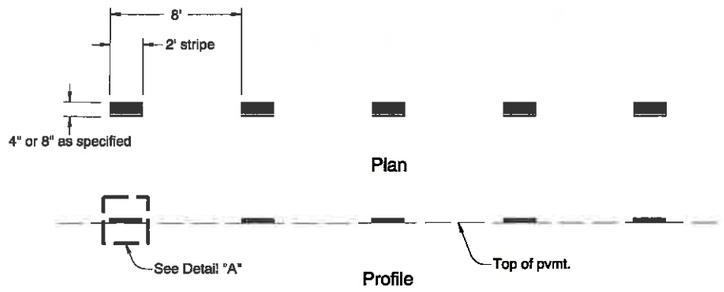
DATE	REVISION DESCRIPTION
1/2009	Modified "median width transition" detail dimensions
7/2009	Modified title (a) and (b) of the Horizontal Curve detail to be more generic
1/2010	Modified Title to match section 00855 specification section
7/2010	Deleted details that appear on TM539; modified RPM placement detail.
1/2011	Modified horizontal curve detail legend for clarity

TM515.dgn 1-6-2012

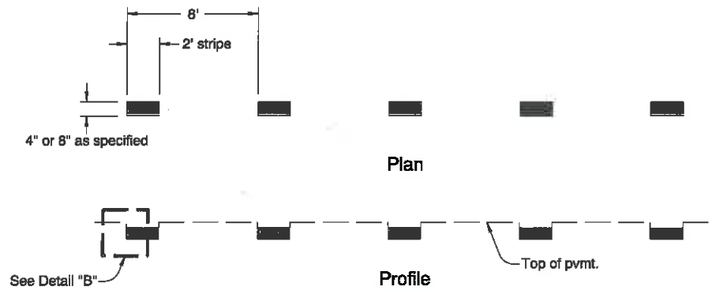
TM515

F:\mgk\Traffic\Standard Drawings\2013_July_Update\plotfile_TM200s_500s.dgn :: Default 7/1/2013 11:25:36 AM hwyr20m

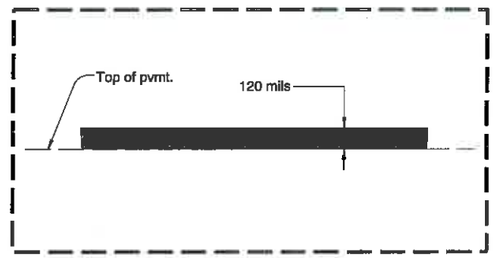
Effective Date: December 1, 2013 - May 31, 2014



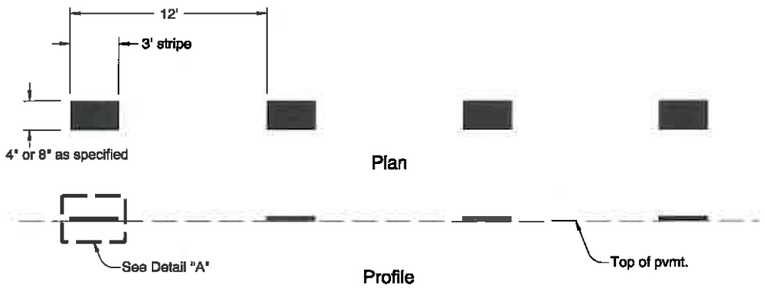
DOTTED LINE
SURFACE INSTALLED



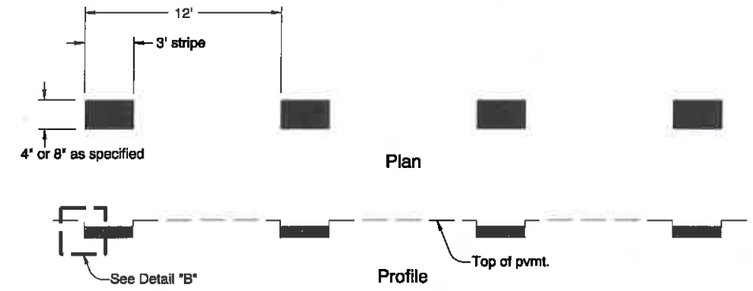
DOTTED LINE
GROOVE INSTALLED



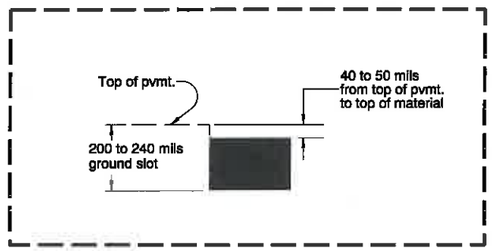
DETAIL "A"
SURFACE INSTALLED



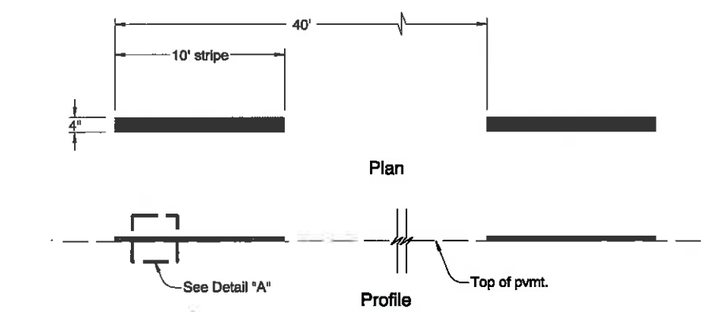
DOTTED LANE LINE
SURFACE INSTALLED



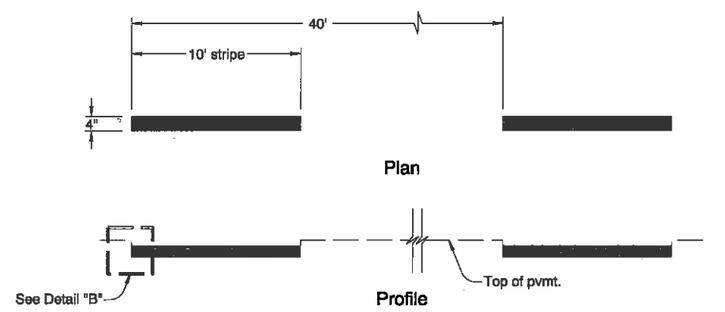
DOTTED LANE LINE
GROOVE INSTALLED



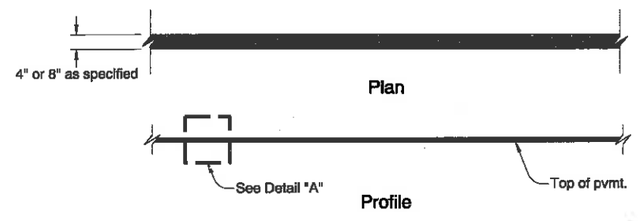
DETAIL "B"
GROOVE INSTALLED



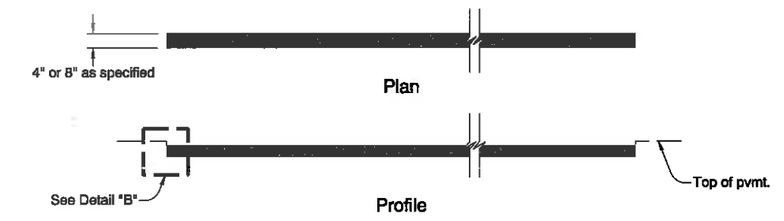
BROKEN LINE
SURFACE INSTALLED



BROKEN LINE
GROOVE INSTALLED



SOLID LINE
SURFACE INSTALLED



SOLID LINE
GROOVE INSTALLED

CALC. BOOK NO. N/A

BASELINE REPORT DATE 07/05/2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS
DURABLE PAVEMENT MARKINGS
METHOD 'A' & METHOD 'B'
SURFACE & GROOVE INSTALLED
NON-PROFILED
2008

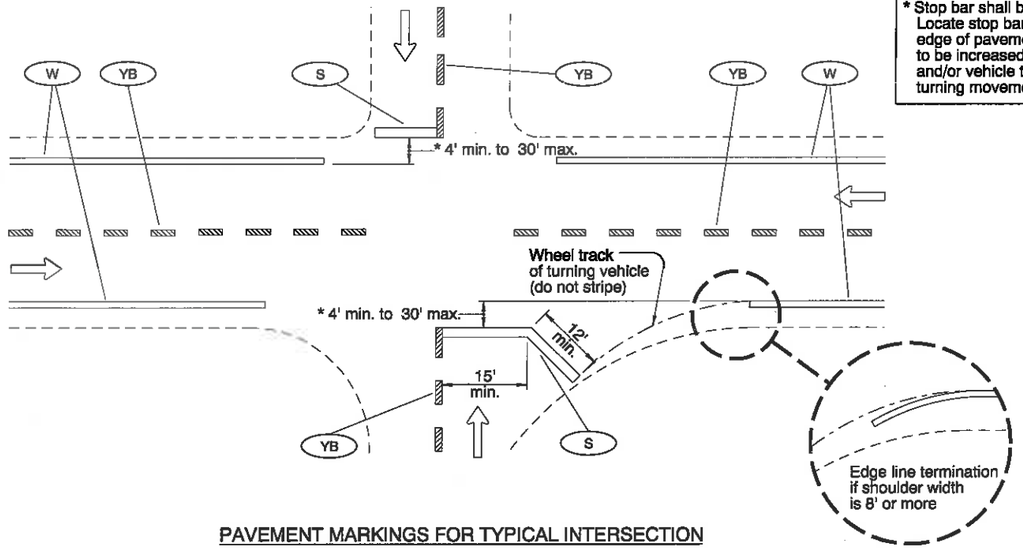
DATE	REVISION DESCRIPTION
7/2009	Removed 90 mil option
12/2010	Revised 'Lane Drop Line' to 'Dotted Lane Line' and revised the width of the striping from 8" to '4" or 8" as specified'.
7/2013	Revised formatting. Changed drawing name. Combined surface and groove installed details on same drawing.

TM521.dgn 07-05-2013

TM521

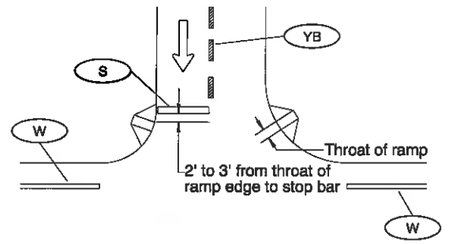
R:\SIGNING-STRIPING\PAVEMENT MARKINGS\STANDARD DRAWINGS\13 Jul\plotfile_TM500s.dgn :: Default 6/26/2013 7:56:31 AM hwyr30c

Effective Date: December 1, 2013 - May 31, 2014

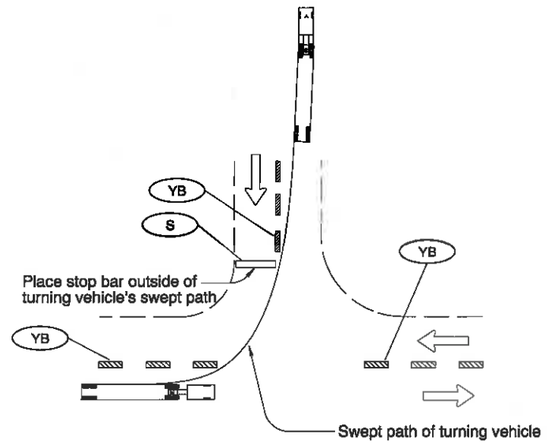


PAVEMENT MARKINGS FOR TYPICAL INTERSECTION

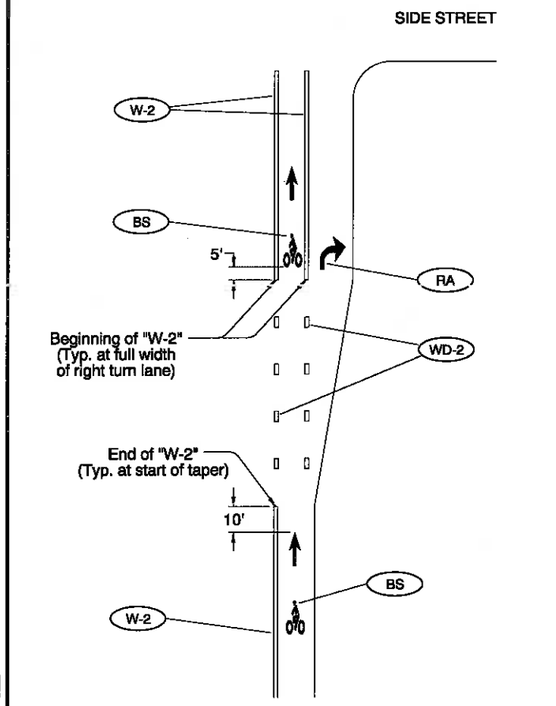
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or vehicle turn radii (see Detail "B"). Field verify sight distance and truck turning movements.



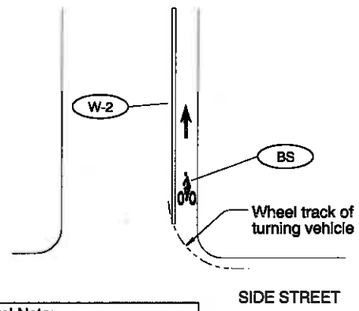
Detail "A"
STOP BAR PLACEMENT WITH
RESPECT TO PEDESTRIAN RAMPS



Detail "B"
STOP BAR PLACEMENT WITH
RESPECT TO TURN RADII

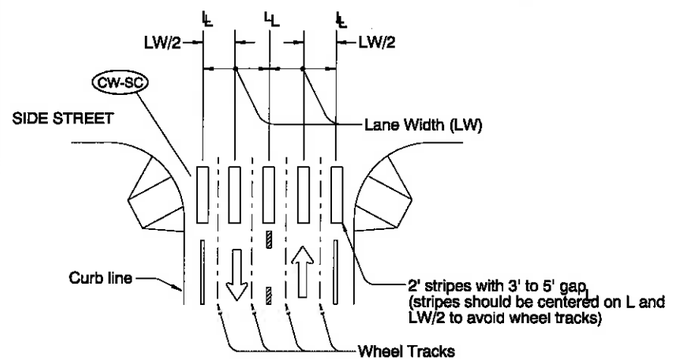


INSTALLATION OF BIKE LANE STENCILS
FOR BIKE LANE SEPARATED BY RIGHT TURN LANE

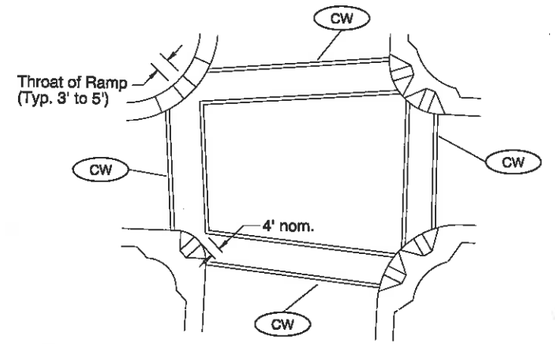


General Note:
Install bike lane stencil to avoid right turning vehicle wheel tracks.

INSTALLATION OF BIKE LANE STENCILS
FOLLOWING INTERSECTIONS



STAGGERED CONTINENTAL LAYOUT



STANDARD CROSSWALK BARS
AT INTERSECTION

General Note:
1. Install crosswalk bars such that the throat of the ADA ramp is entirely within crosswalk markings, or 5' back of extended fog line, edge of pavement, or curb face.

LEGEND
Direction of Travel
℄ - Lane line dimensions are shown on the striping plans

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. _____ BASELINE REPORT DATE July 1, 2010

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)

2008

DATE	REVISION DESCRIPTION
7/2010	Edited truck wheel path in Detail B for clarity

TM530.dgn 1-6-2012

TM530

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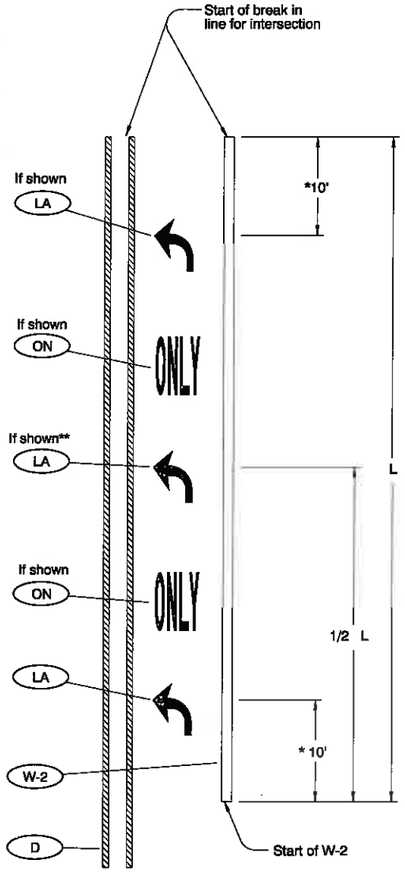
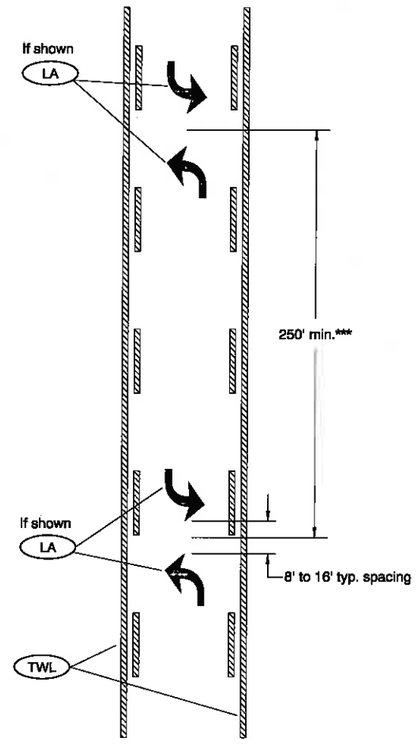
Effective Date: December 1, 2013 - May 31, 2014

TM530



LANE USE ARROW PLACEMENT FOR TURN LANE

DETAIL "A"



TWO-WAY LEFT TURN LANE ARROW PLACEMENT

DETAIL "B"

General Notes:

1.) Center pavement marking legends within the lane.

2.) Placement of lane use arrows with respect to the 8" wide white line (W-2) channelization shown in Detail "A" applies to both left and right turn lanes.

3.) Center "ONLY" markings between lane use arrows.

* 15' when installing elongated arrows.

** When L is greater than 400', install 3rd lane use arrow at ½ L as shown in Detail "A".

*** Double arrows to be placed at even intervals, proportioned within block or as shown.

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12/16/2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

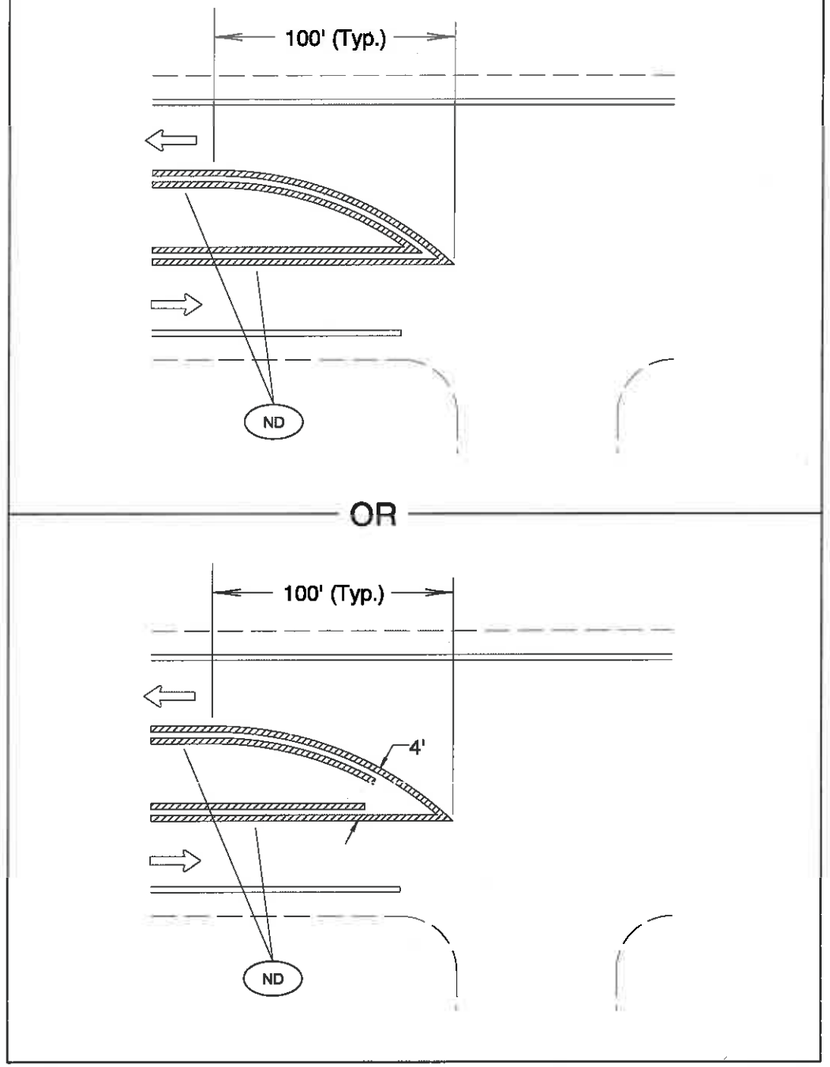
OREGON STANDARD DRAWINGS

TURN ARROW MARKING DETAILS

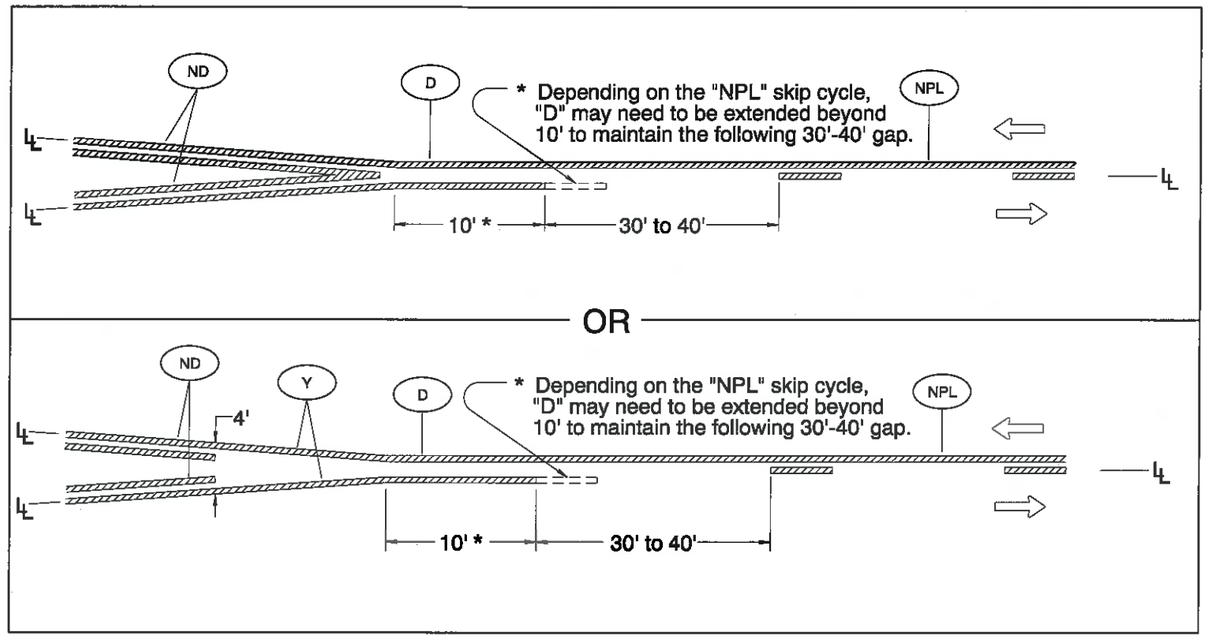
2008

DATE	REVISION DESCRIPTION
12/2010	Consolidated Details "A", "B", and "C" into one Detail.
12/2010	Added General Note 3.
12/2011	Renumbered the drawing from TM825 to TM831.

TM531



MEDIAN BULLNOSE DETAIL



MEDIAN WIDTH TRANSITION

(TWO NARROW DOUBLE YELLOW LINES TO ONE-DIRECTION NO-PASSING LINE)

LEGEND

Increasing stationing from left to right

⇦ Direction of Travel

℄ — Lane line dimensions are shown on the striping plans

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12/16/2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

MEDIAN AND LEFT TURN CHANNELIZATION DETAILS

2008

DATE	REVISION DESCRIPTION
1/2009	Modified "median width transition" detail dimensions
7/2011	Added alternate detail for Median Bullnose Detail
12/2011	Added legend for lane line

TM539.dgn 07-05-2013

TM539

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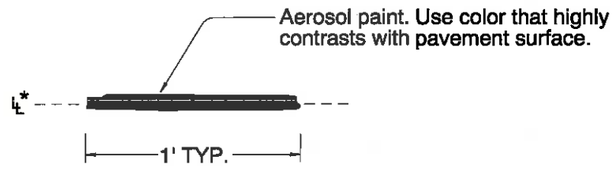
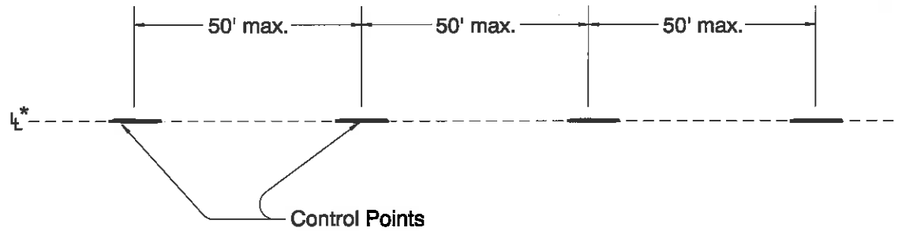
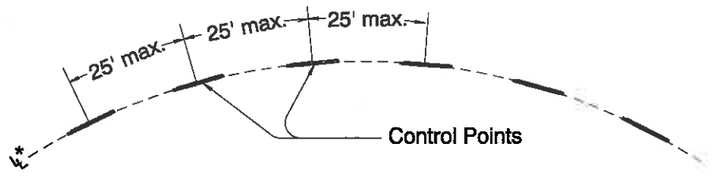
Effective Date: December 1, 2013 - May 31, 2014



CONTROL POINT



CONTROL POINT LAYOUT - TANGENT SECTIONS



CONTROL POINT LAYOUT - CURVE SECTIONS

General note:

1.) Use control points to make continous narrow guideline as specified.

* Control points are placed along the lane line for all longitudinal lines except:

a) A control point layout 8" offset from the lane line is required for following lines:

TWL	ND For traversable medians only	D For left turn refuges only	Y For non-traversable medians on undivided highways only

See Std. Dwg. No. TM561 for additional details.

b) A control point layout 4" offset from the lane line is required for the following line:

ND For center lines only

LEGEND

℄ — Lane line dimensions are shown on the striping plans.

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. N/A

BASELINE REPORT DATE 07/08/2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: GENERAL

2008

DATE	REVISION DESCRIPTION
1/2009	New Drawing
7/2011	Revised note regarding control point offset for ND line.

TM560.dgn 07-05-2013

TM560

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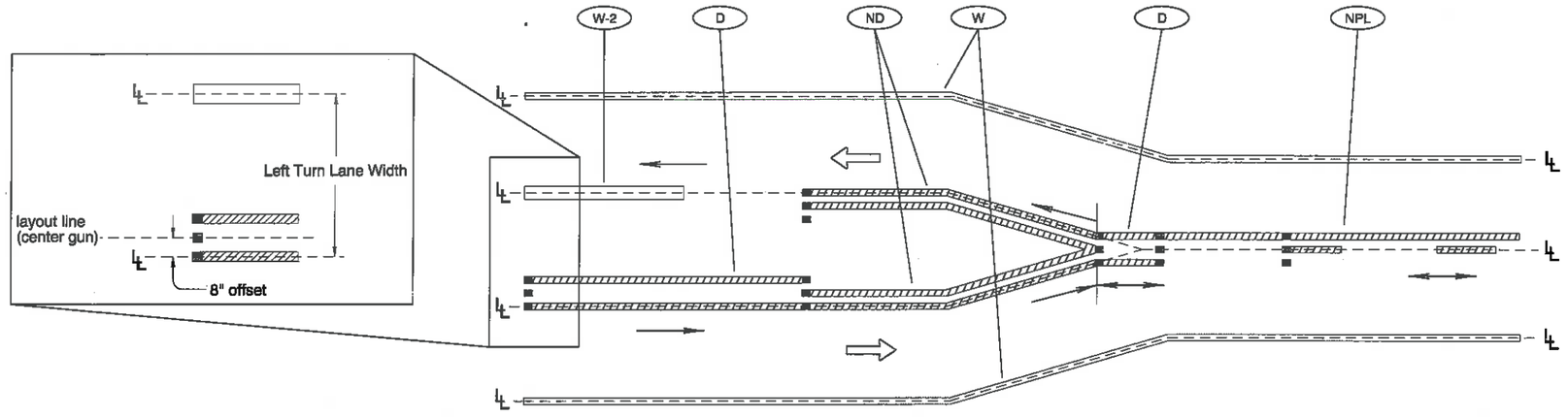
Effective Date: December 1, 2013 - May 31, 2014

TM560



LEFT TURN LANE ALIGNMENT LAYOUT

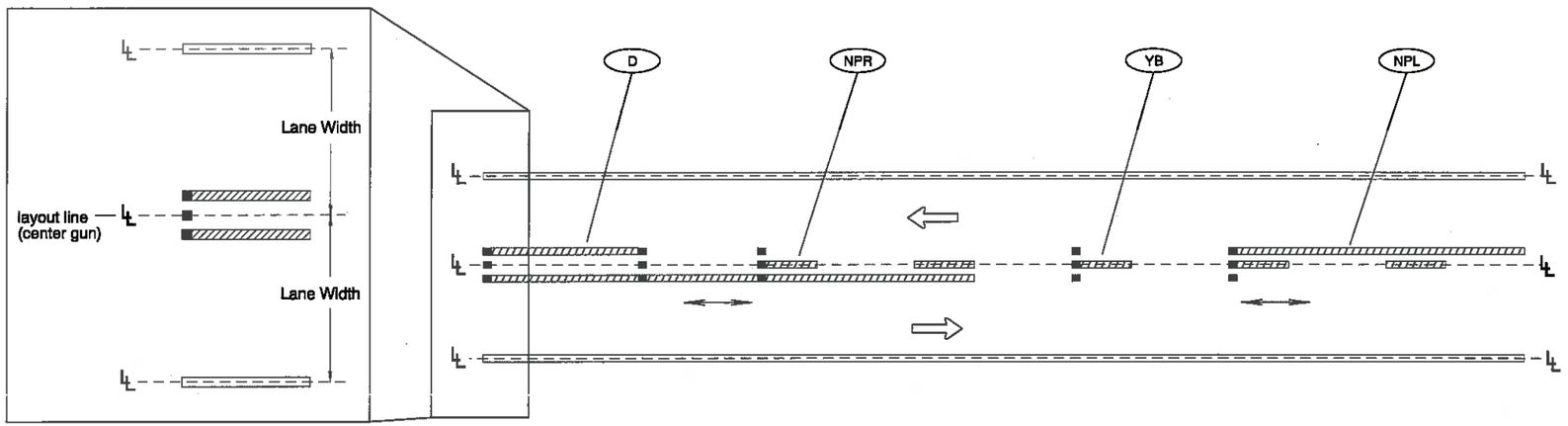
General note:

1.) Install control points for pavement marking alignment layout along the center gun location.

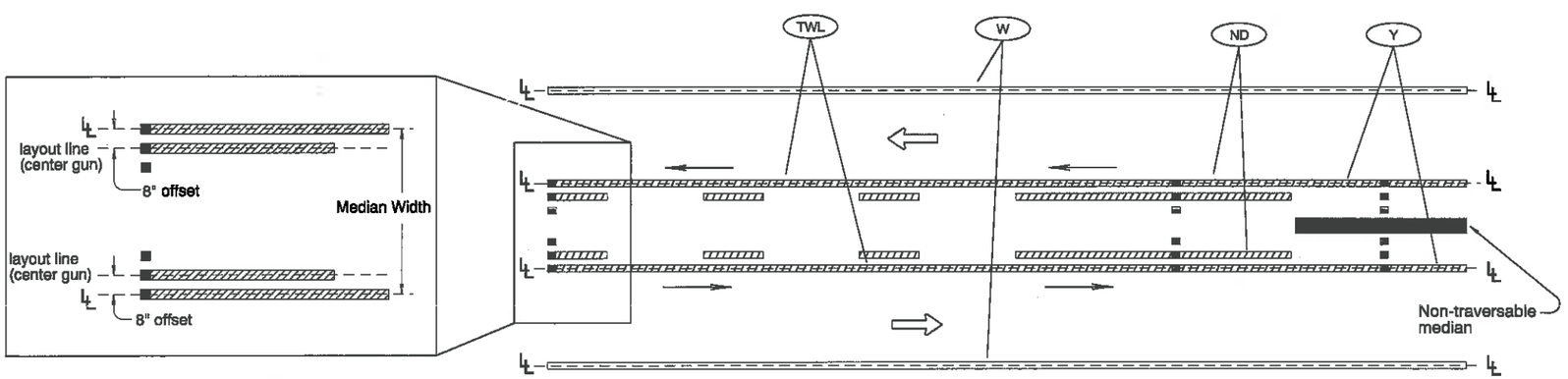
2.) Increasing stationing from left to right

LEGEND

- Direction Of Travel and Thru Traffic Side.
- Lane line dimensions are shown on the striping plans.
- Direction of striping truck (may go either direction)
- Direction of striping truck (may go one direction only)
- Three gun installation system (center dot represents center gun)



CENTERLINE ALIGNMENT LAYOUT



MEDIAN ALIGNMENT LAYOUT

Line Types requiring control points to be 8" offset from lane line:

TWL

ND *

For traversable medians only

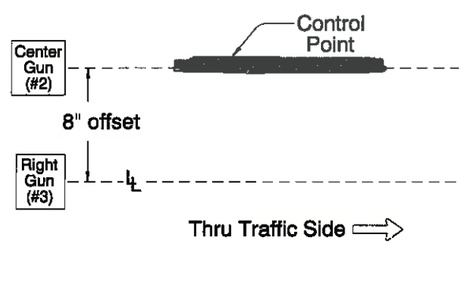
D

For left turn refuges only

Y

For non-traversable medians on undivided highways only. Right gun (#3) to be used.

Median/left turn refuge side



8" Offset of Lane Line and Center Gun

* When ND is used as centerline markings, a control point layout 4" offset from the lane line is required.

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. N/A

BASELINE REPORT DATE 07/08/2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS

2008

DATE	REVISION DESCRIPTION
1/2009	New Drawing
7/2011	Added note * for ND line.

TM561.dgn 07-05-2013

TM561

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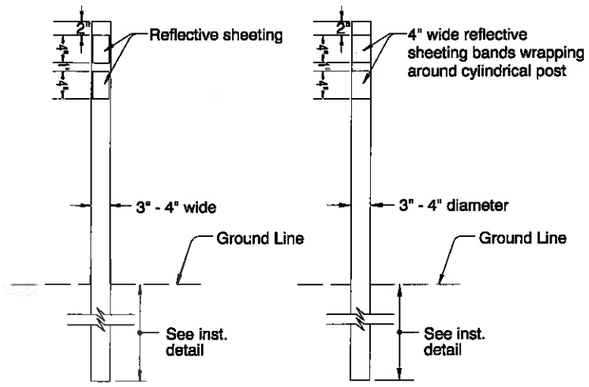
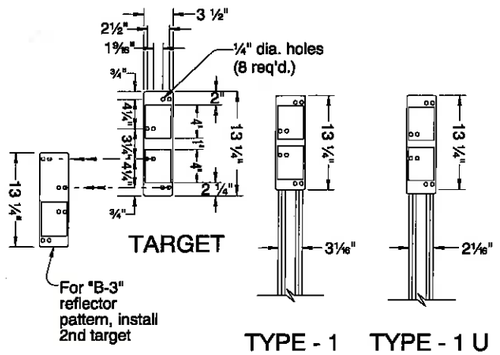
Effective Date: December 1, 2013 - May 31, 2014

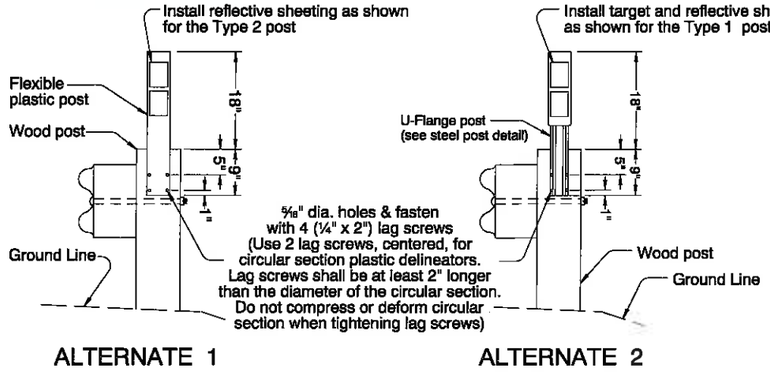


TYPE - 2 TYPE - 3

FLEXIBLE PLASTIC POSTS

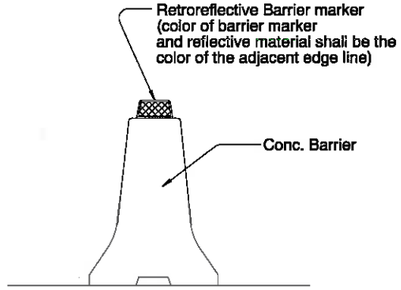


TYPE - 1 TYPE - 1 U



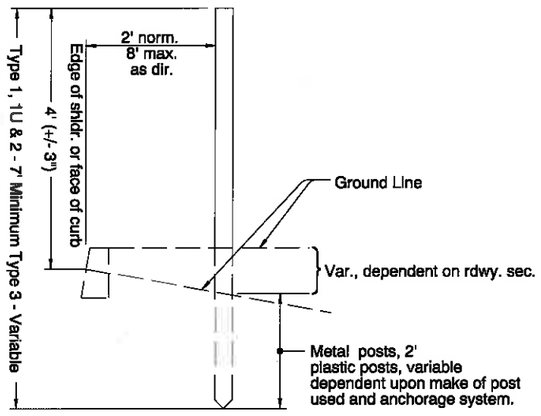
ALTERNATE 1 ALTERNATE 2

TYPE - 4



TYPE - 5

STEEL POSTS



INSTALLATION DETAIL

GUARDRAIL AREAS (WITH WOOD POSTS)

NOTES:

POST:
Galv. steel, nominal weight Type 1, 2 lb/ft, Type 1 U, 1.12 lb/ft.

See Standard Drawing TM571 for steel post dimensions and details.

TARGET:
Aluminum sheet, nominal thickness .050". Fasten to post with⅜" dia. aluminum blind rivets and washers.

For "B-3" reflector pattern, top target shall overlap bottom target.

REFLECTORS:
3" x 4" reflective sheeting unless otherwise shown.
(3½" x 4" reflective sheeting is an acceptable alternate unless otherwise shown.)
Acrylic prismatic reflectors acceptable on Type 1, 1 U, 2 and 4 posts and Type 5 barrier mounts.
Place required number in sequence from top of target.

CONCRETE BARRIER AREAS

(Install barrier markers at 50' spacing unless otherwise noted in plans)

GENERAL NOTES:

1. Spacing shall be measured along the shoulder.
2. On roads with less than 500 vehicle ADT, delineators are not to be used except where situations such as sharp horizontal curves, etc. exist.
3. To clear driveways, crossroads etc., or for required adjustments at ramps and at intersections, either:
   (a) vary placement of that post up to 25% of spacing shown, or;
   (b) eliminate said post if limit of variation must be exceeded.
4. Judgement should be exercised in the installation of delineators in cut section, particularly on roads constructed to older standards where ditches are narrow and where delineators tend to hamper maintenance operations.
5. On horizontal curves place delineators nearly opposite each other.
6. At guard rail locations the delineators are to be installed behind the rail and shall be located adjacent to guard rail posts as shown for Type 4 Delineators.
7. Install all delineators with reflectors facing adjacent oncoming traffic.
8. Offset delineators an additional 4' in areas of heavy snow removal operations.
9. Backside Delineators may be used in frequently snow plowed areas where use of snow poles is not justified. When Backside Delineators are specified, substitute "W-1" and "W-2" with "W-1B" and "W-2B" respectively, on Type 1 steel posts. Do not install Backside Delineators on one-way sections of roadway, freeways and ramps, or on radius sections.
10. Refer to TM 222 for bracket assembly details for Backside Reflector Pattern.

TANGENT	HORIZONTAL CURVES				
▲MAX. SPACING EACH SIDE OF ROADWAY IN FEET	▲ MAX. SPACING EACH SIDE OF ROADWAY IN FEET				
	DEGREE OF CURVE	ON CURVE	IN ADVANCE OF & BEYOND CURVE		
			FIRST SPACE	SECOND SPACE	THIRD SPACE
400	Lower Than 1	300	300	300	300
	1	230	300	300	300
	2	160	300	300	300
	3	130	260	300	300
	4	110	220	300	300
	5	100	200	300	300
	6	90	180	270	300
	7 - 8	80	160	240	300
	9 - 11	70	140	210	300
	12 - 16	60	120	180	300
	17 - 22	50	100	150	300
	23 - 34	40	80	120	240
	35 - 53	30	60	90	180
	54 & Higher	20	40	60	120

(Min. spacing 20 feet)

(▲Install "W-1" reflective pattern unless otherwise noted. See Standard Drawings TM575 thru TM577 for spacing, layout, and reflective pattern of delineators at interchange ramps, channelized intersections, lane reductions, emergency escape ramps and freeway crossovers.)

DELINEATOR SPACING TABLE FOR TYPES 1, 1U, 2, and 4

REFLECTOR PATTERN TABLE					
	Color Type	Color Of Reflector And Target Or Post	Number Of Reflectors	Color Of Reflector And Target Or Post On Backside	Number Of Reflectors On Backside
Standard Pattern	"W-1"	White	1	Not Applicable	Not Applicable
	"W-2"	White	2		
	"Y-1"	Yellow	1		
	"Y-2"	Yellow	2		
	"B-1"	Blue	1		
	"B-2"	Blue	2		
	"B-3"	Blue	3		
	"R-1"	Red	1		
Backside Pattern	"W-1B"	White	1	White	2
	"W-2B"	White	2	White	2

To be accompanied by Drg. No. TM571, TM575, TM576, and/or TM577 as specified.

CALC. BOOK NO. _____ BASELINE REPORT DATE 01/08/2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

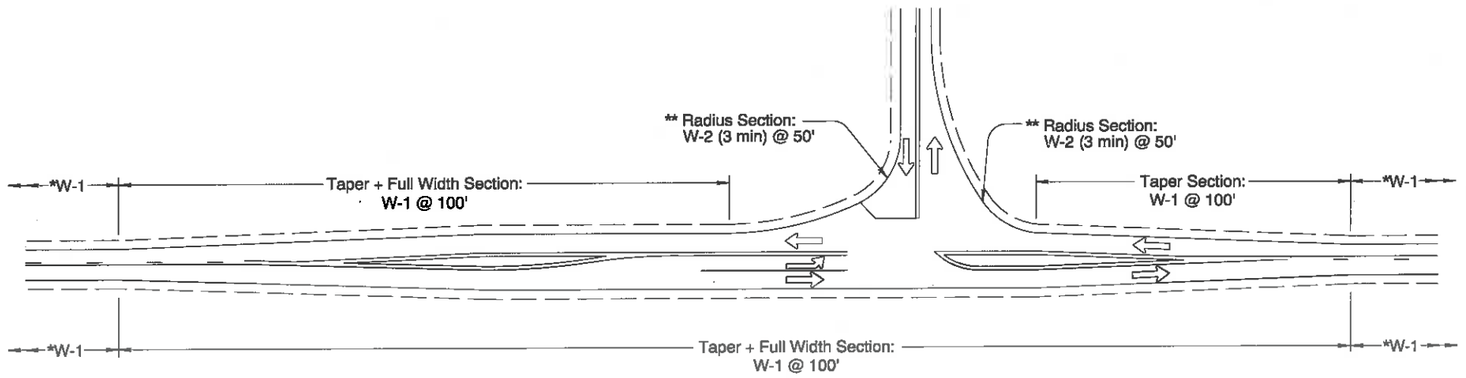
OREGON STANDARD DRAWINGS

TRAFFIC DELINEATORS

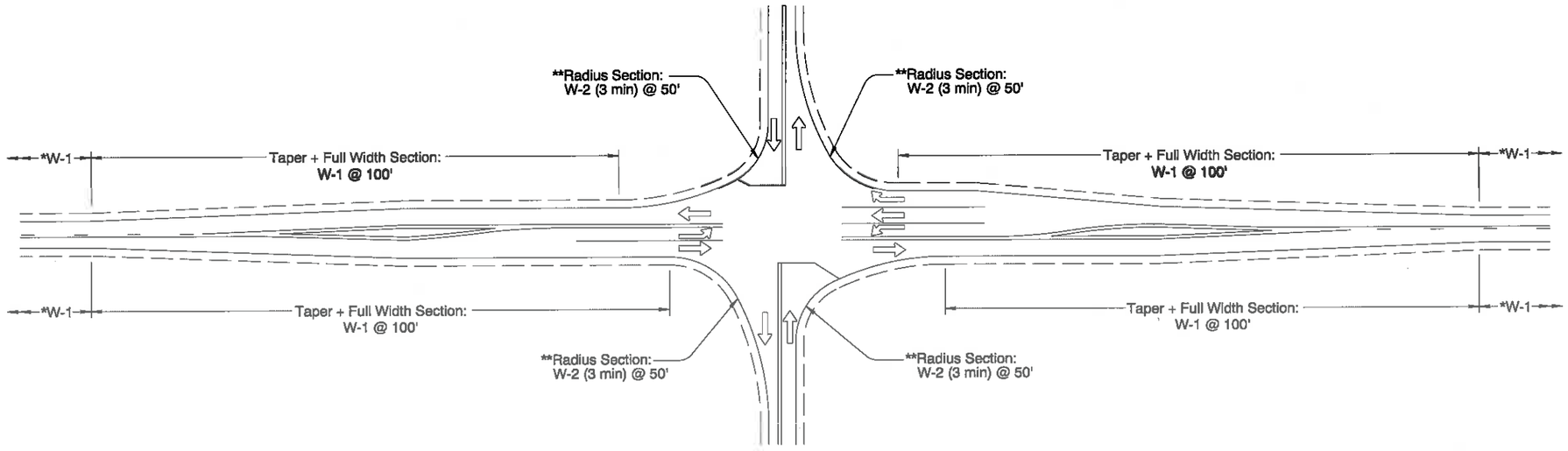
2008

DATE	REVISION DESCRIPTION
1/2011	Added construction details for Type 4 delineator
12/2011	Added maximum and minimum spacing parameters
12/2011	Added Type 5 barrier reflectors to list of acrylic materials

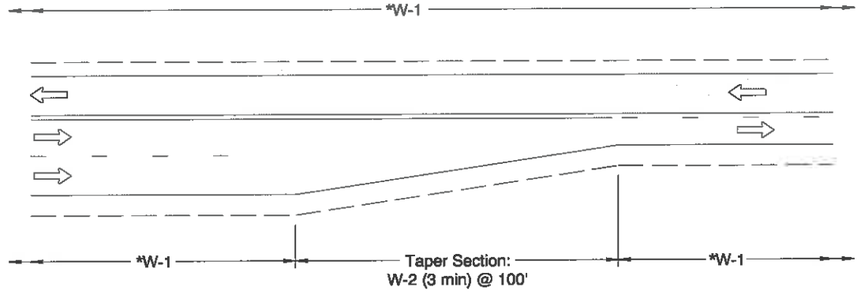
TM570



THREE-LEG CHANNELIZED



FOUR-LEG CHANNELIZED



LANE REDUCTION

NOTES:

1.) For post types see Standard Drawing TM570

*For delineator spacing, see "Delineator Spacing Table" located on Standard Drawing TM570.

**For Radius Sections at channelized intersections: Regions 1, 2, and 3, install Type 3 flexible plastic posts. Regions 4 and 5 install Type 1 delineators.

LEGEND

⇦ Direction of Travel

To be accompanied by Drg. No. TM570

CALC. BOOK NO. _____

BASELINE REPORT DATE December 10, 2009

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

TRAFFIC DELINEATOR INSTALLATION FOR NON-FREEWAYS

2008

DATE	REVISION DESCRIPTION

TM576.dgn 1-6-2012

TM576

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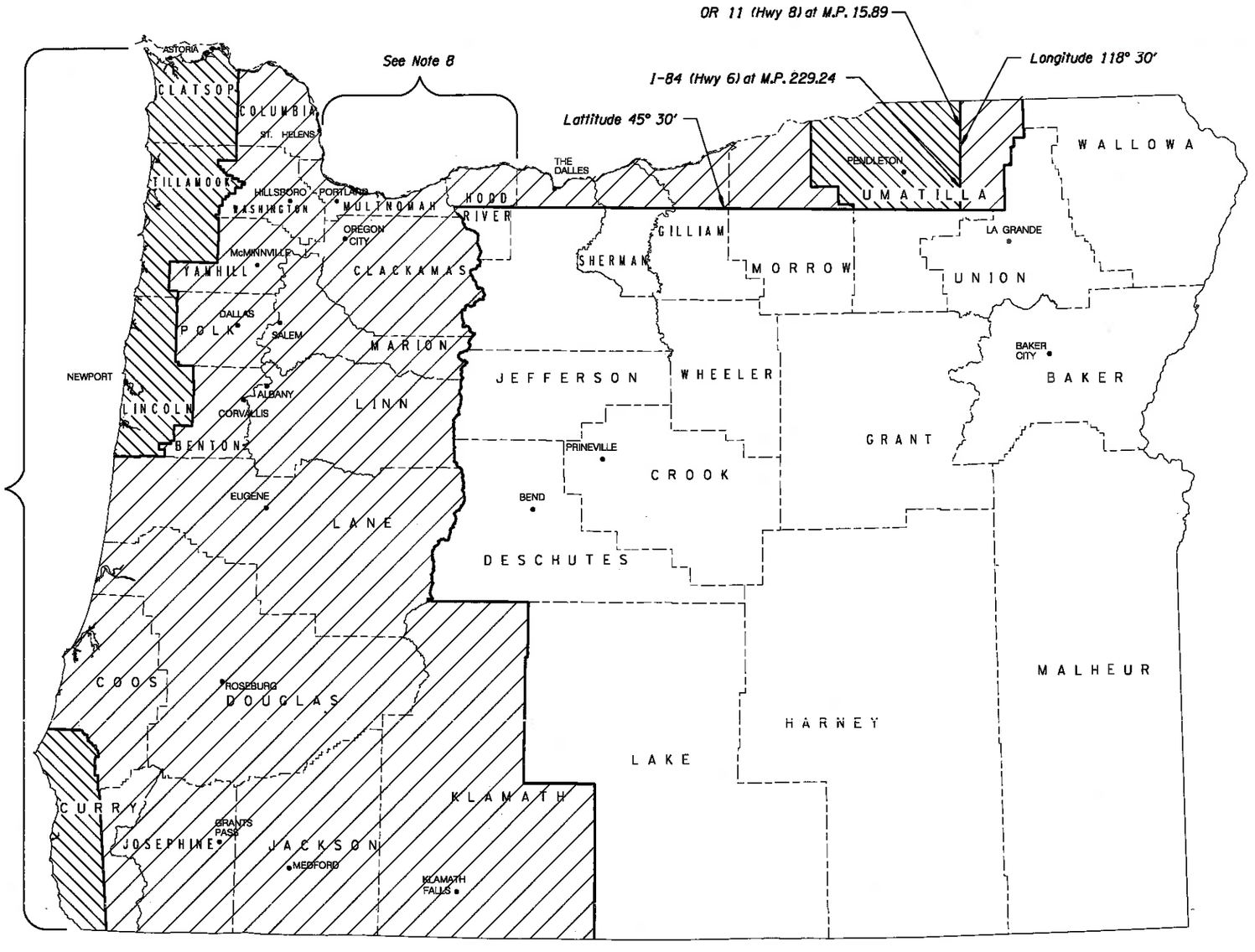
Effective Date: December 1, 2013 - May 31, 2014



NOTES:

1. The wind velocity map as shown is adapted from AASHTO 2001 4th Edition - "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", Appendix C, Figure C-3 and Section 3, Figure 3-2. It uses the wind speed map shown in Figure 1609 of the 2007 Oregon Structural Code to account for locations in the State with special wind regions.
2. The wind velocities shown above are 3-Second Gust wind velocities.
3. The Exposure Catagory is C.
4. The mean recurrence interval is 50-Years.
5. Mountanious terrain, gorges, and ocean promontories are classified as special wind regions and shall be examined for unusual wind conditions.
6. The Interval Height (Kz) is 30 ft.
7. All areas with full exposure to ocean winds shall be designated 110 mph areas.
8. Areas in Multnomah and Hood River counties with full exposure to Columbia River Gorge winds shall be designated 110 mph areas.
9. Localities may have adopted wind speed higher that shown on this map. Those higher wind speed shall be used.

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
	06-JAN-2012		1 OF 1

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

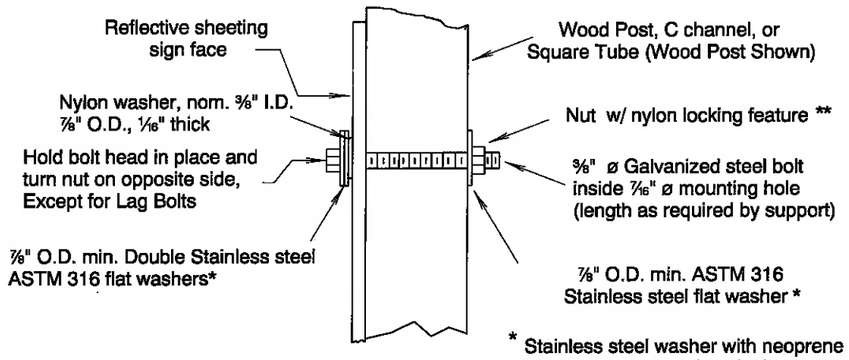
3 SECOND GUST WIND SPEED MAP

2008

DATE	REVISION DESCRIPTION
01/09	Modified map to reflect Oregon Structural Specialty Code modifications.
01/11	Changed name from ISOTACH to MAP and corrected spelling error in Note 8.
01/12	Added Baseline Report Date.

tm671.dgn 06-JAN-2012

TM671



* Stainless steel washer with neoprene layer is an acceptable substitue

** Acceptable substitute for nylon locking nuts:
ANCO PIN-LOC ®
TRI-LOC ® Top Lock Locknut

Note:
1)When signs are placed on opposing sides of post, ⅜" x 3" lag bolts can be used instead of through bolt.
2) Use nylon and stainless steel washers when signs are placed on both sides of post.
3) Burr threads at junction with nut when locknuts are not used.
4) Post bolts to extend beyond the tightened nuts within the limits of ¼" to 1".

SIGN ATTACHMENT DETAIL

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
			1 OF 1

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

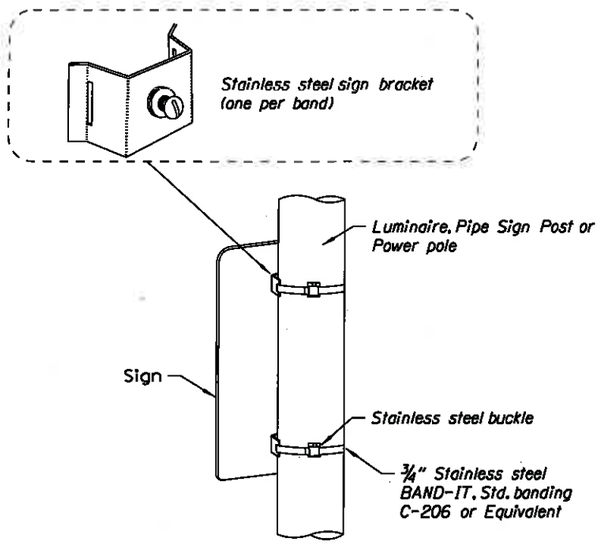
SIGN ATTACHMENTS

2008

DATE	REVISION DESCRIPTION

tm676.dgn 05-JAN-2009

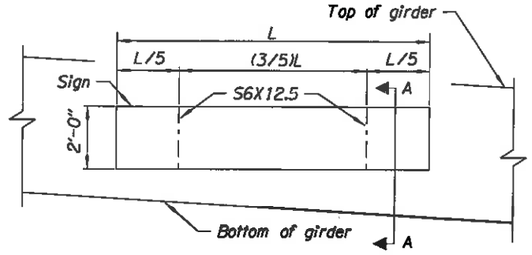
TM676



Signs mounted to vertical posts that use stainless steel clamps shall not be wider than 36". Use 2 clamps for all signs less than 48" in height and 3 clamps for signs 48" to 60" in height.

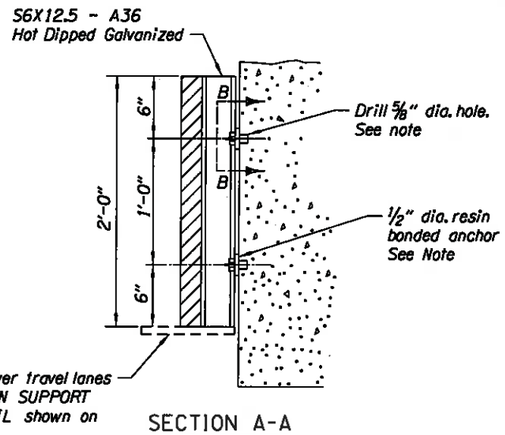
STAINLESS STEEL CLAMP (SSC) DETAIL

No Scale



SIGN ELEVATION

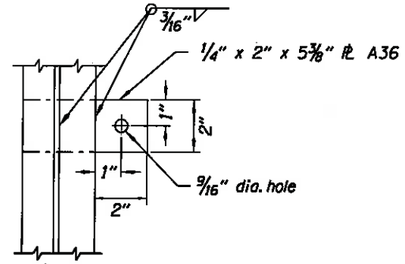
No Scale



Signs mounted over travel lanes shall use the SIGN SUPPORT BRACKET DETAIL shown on TM618

SECTION A-A

No Scale



SECTION B-B

No Scale

Note:
Resin bonded anchors shall conform to ASTM specification A307. The resin bonding shall develop a min. pullout strength of 20,000 pounds for ¾" diameter anchors and 14,000 pounds for ⅝" diameter anchors.

The hole depths shall be required to develop the specified pullout strength but not less than 5" for ⅝" anchors and 5½" for ¾" diameter anchors.

ROAD NAME SIGN STRUCTURE MOUNT DETAIL

GENERAL NOTES

1. *For Secondary Sign Mounts See TM678.*

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
			1 or 1

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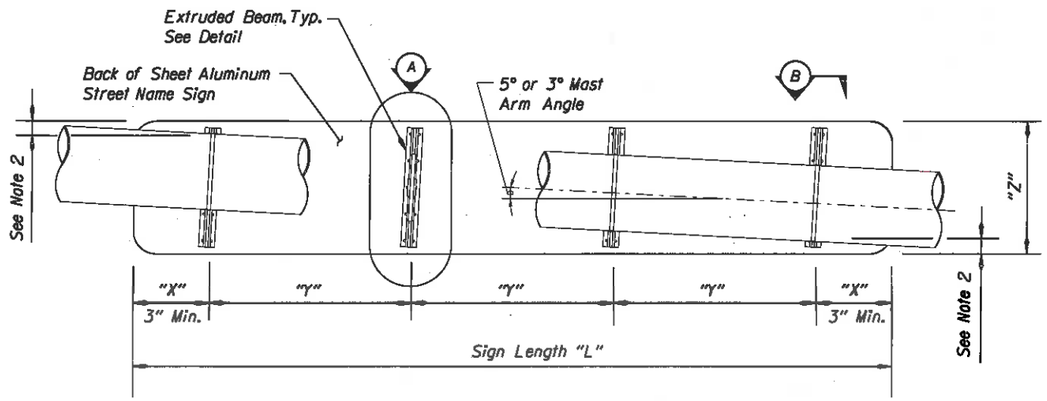
OREGON STANDARD DRAWINGS

SIGN MOUNTS

2008

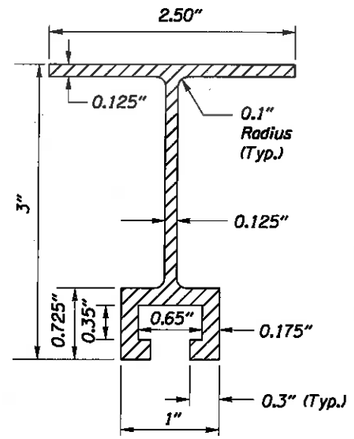
DATE	REVISION DESCRIPTION
01/09	Removed street name sign reference in stainless steel clamp detail.
01/11	Added "No Scale" and TM618 reference, moved resin note, and changed ⅜" weld.



Mast Arm Street Name Mount Requirements				
Sign Length "L"	Maximum Sign Height "Z"	Maximum Edge Distance "X"	Maximum Support Spacing "Y"	Number of Extruded Beam Locations
"L" Less than or Equal to 4'-0"	30"	"L"/4	"L"/2	2
"L" Greater than > 4'-0" and "L" less than or Equal to 8'-0"	30"	1'-0"	3'-0"	3
"L" Greater than > 8'-0" and "L" less than or Equal to 10'-0"	21"	1'-0"	2'-8"	4
"L" Greater than > 10'-0" and "L" less than or Equal to 12'-0"	21"	1'-0"	2'-6"	5

MAST ARM STREET NAME SIGN MOUNT

No Scale

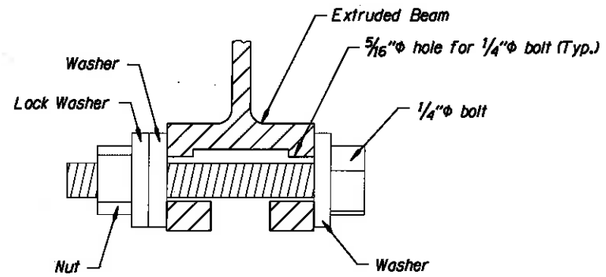


EXTRUDED BEAM DETAIL

No Scale

GENERAL NOTES:

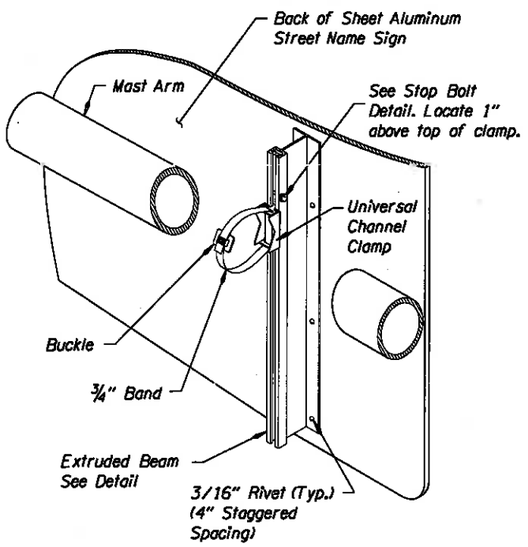
1. Physical fit of the sign must be verified. The edges of the street name sign shall not be within 6" of other signs or the mast arm connection flanges.
2. Equal spaces top and bottom.
3. The top pf the street name sign shall be leveled.
4. Extruded Beams are to be set at an angle perpendicular to the mast arm.
5. Material for extruded beam shall be ASTM B 221 6061-T6 Aluminum.
6. Material for ¾" Band shall be ¾" wide, 0.03" thick, and ASTM A 666, Type 201 Stainless Steel.
7. Material for the Sign Bracket, Universal Channel Clamp, and buckle shall be ASTM A 666, Type 201 Stainless Steel.
8. Existing signal poles must be analyzed to verify that the pole and foundation can support the new street name sign loading. See TM650 for allowable street name sizes on new installations.



1. All hardware to be Type 316 Stainless Steel.
2. Locate 1" above the top of the Universal Channel Clamp.

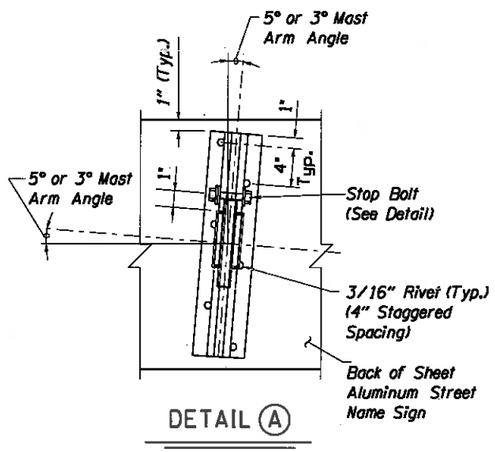
STOP BOLT DETAIL

No Scale



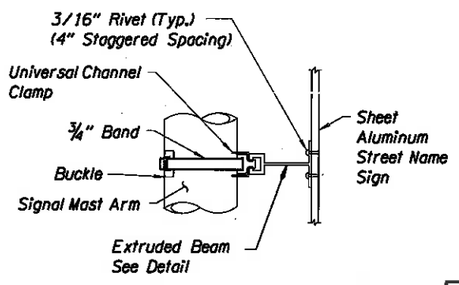
TYPICAL MAST ARM INSTALLATION

No Scale



DETAIL (A)

No Scale



DETAIL VIEW (B)

No Scale

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
	06-JAN-2012		1 OF 1

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

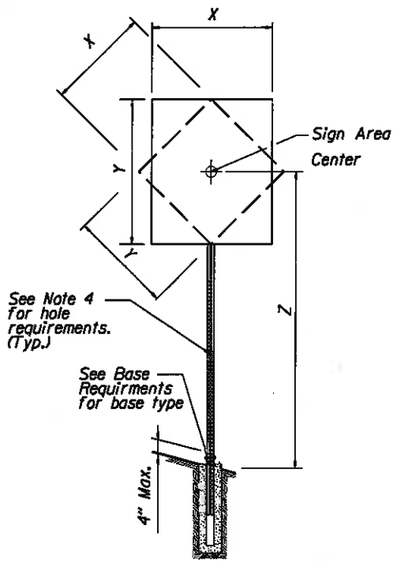
SIGNAL MAST ARM STREET NAME SIGN MOUNTS

2008

DATE	REVISION DESCRIPTION
01/12	Added Baseline Report Date.

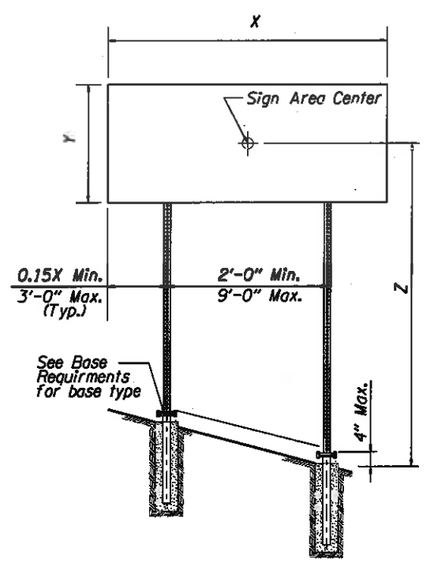
tm679.dgn 06-JAN-2012

TM679



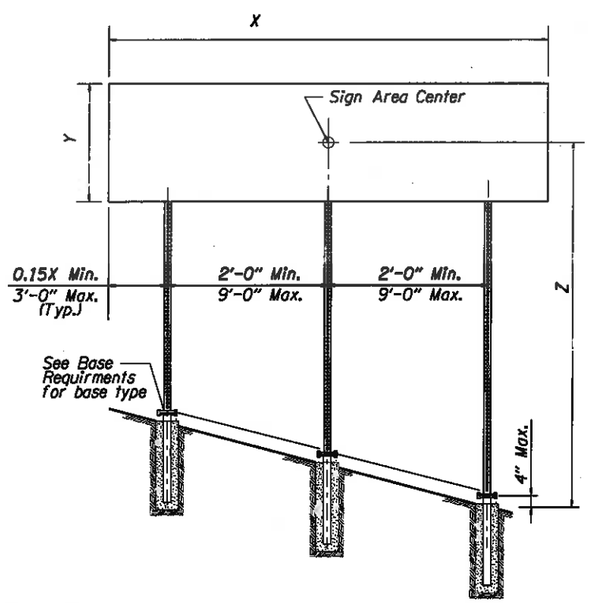
SINGLE POST ELEVATION

No scale



TWO POST ELEVATION

No scale



THREE POST ELEVATION

No scale

GENERAL NOTES:

1. Perforated Steel Square Supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 4th Edition, 2001, 2002, 2003, and 2006 interim revisions.
2. The design basic wind speed (3 second gust) shall be according to the wind map shown on TM671.
3. Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.
4. Use $\frac{7}{16}$" diameter holes at 1" spacing on each of the 4 sides.
5. Steel post shall have a minimum yield stress of 50 ksi.
6. Steel shall be galvanized according to ASTM A653 with coating designation G140.
7. General design parameters are Kz = 0.87, Cd (sign) = 1.20, and G = 1.14.
8. Permanent signing uses an Ir = 0.71 for a recurrence interval of 10 years.
9. Temporary signing uses an Ir = 0.45 for a recurrence interval of 1.5 years.
10. The sign width to sign height or sign height to sign width ratio shall not exceed 5.0.
11. For horizontal and vertical clearances of permanent signs refer to TM200 and of temporary signs refer to TM821.
12. Posts protected by barrier or guardrail do not require slip bases.

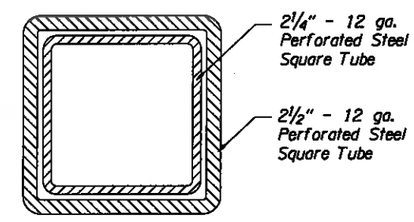
	(X * Y * Z) in ft^3								
	3 Second Gust Wind Speed (TM671)								
	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"-12 ga.	79	158	237	63	126	189	57	114	171
2½"-12 ga.	136	272	408	109	218	327	98	196	294
2½"-10 ga.	165	330	495	132	264	396	119	238	357
2¼" & 2½"-12 ga.*	231	462	693	185	370	555	167	334	501

PERMANENT PERFORATED STEEL SQUARE TUBE TABLE

	(X * Y * Z) in ft^3								
	3 Second Gust Wind Speed (TM671)								
	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"-12 ga.	125	250	375	100	200	300	90	180	270
2½"-12 ga.	215	430	645	172	344	516	155	310	465
2½"-10 ga.	261	522	783	209	418	627	189	378	567
2¼" & 2½"-12 ga.*	364	728	1092	292	584	876	263	526	789

TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - See 2¼" & 2½" - 12 ga. detail.



2¼" - 12 ga. PSST to extend entire length inside of the 2½" - 12 ga. PSST.

2¼" & 2½" - 12 GA. DETAIL

No scale

	Number of Posts		
Square Tube Size	1	2	3
2"-12 ga.	Anchor	Anchor	N/A
2½"-12 ga.	Anchor	Slip	Slip
2½"-10 ga.	Slip	Slip	Slip
2¼" & 2½"-12 ga.*	Slip	Slip	Slip

1. Anchor - See Drawing TM687 for PSST anchor foundation details.
2. Slip - See Drawing TM688 for PSST slip base foundation details.
3. N/A - Do not use this option.

BASE REQUIREMENTS

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
5752	06-JAN-2012	TM200, TM671, TM687, TM688, TM775	1 OF 3

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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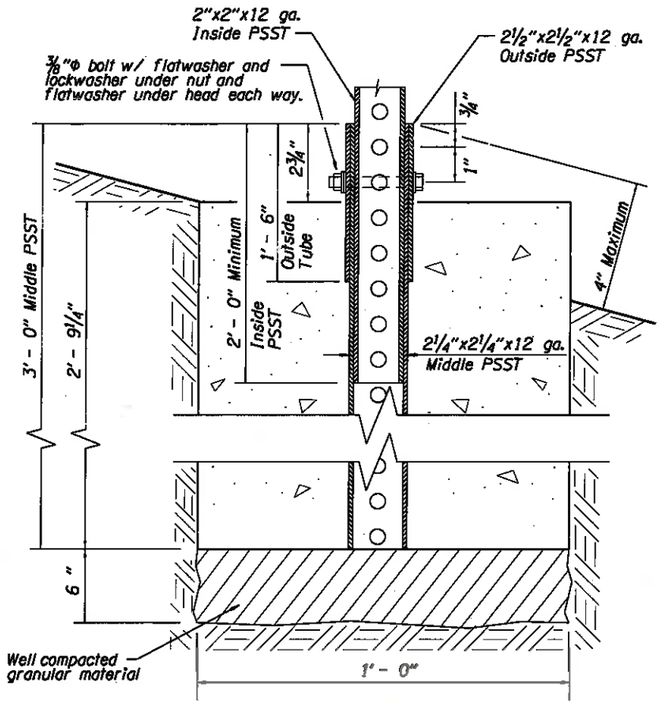
OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

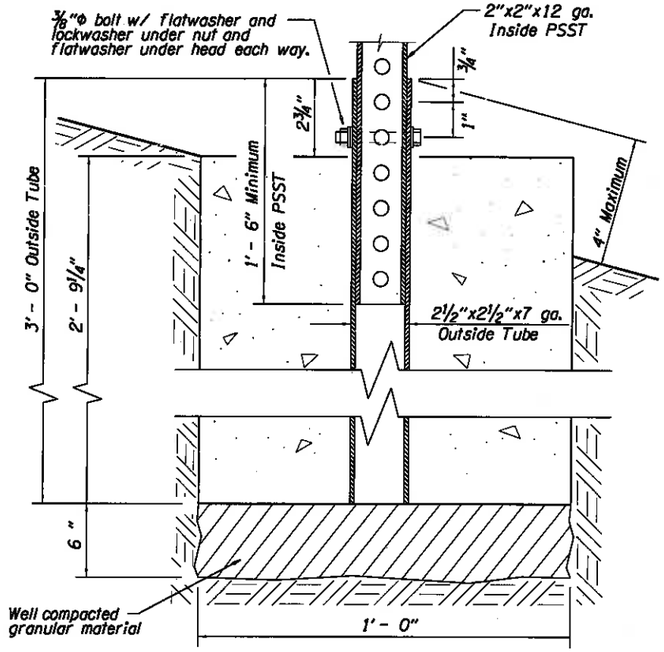
2008

DATE	REVISION DESCRIPTION
01/09	Added multiple posts, slip bases, and X*Y*Z values.
01/11	Changed TM775 to TM821.
01/12	Added Baseline Report Date.



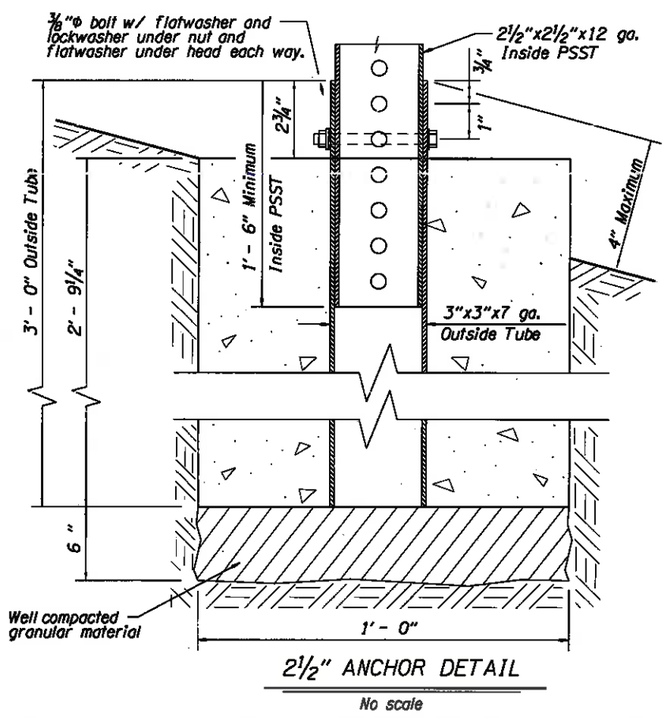
2" ANCHOR DETAIL

No scale



2" OPTIONAL ANCHOR DETAIL

No scale

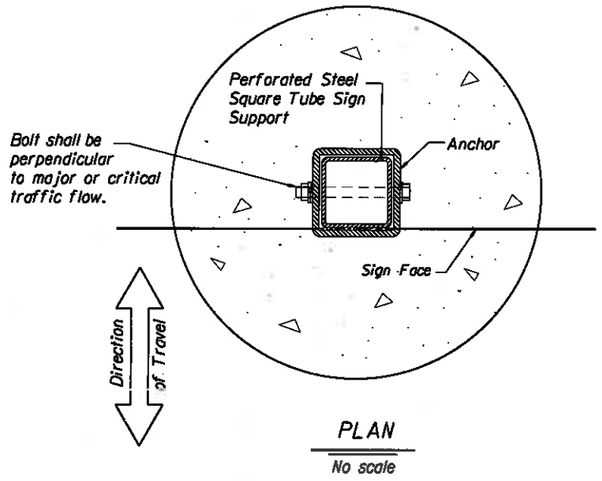


2½" ANCHOR DETAIL

No scale

General Notes:

1. Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.
2. Anchor steel shall be hot dipped galvanized or approved equal.
3. Footing concrete shall be Commercial Grade Concrete (fc = 3000 psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.
4. The estimated concrete volume is .09 cubic yards.



PLAN

No scale

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
5752	06-JAN-2012	TM681, TM688	2 OF 3

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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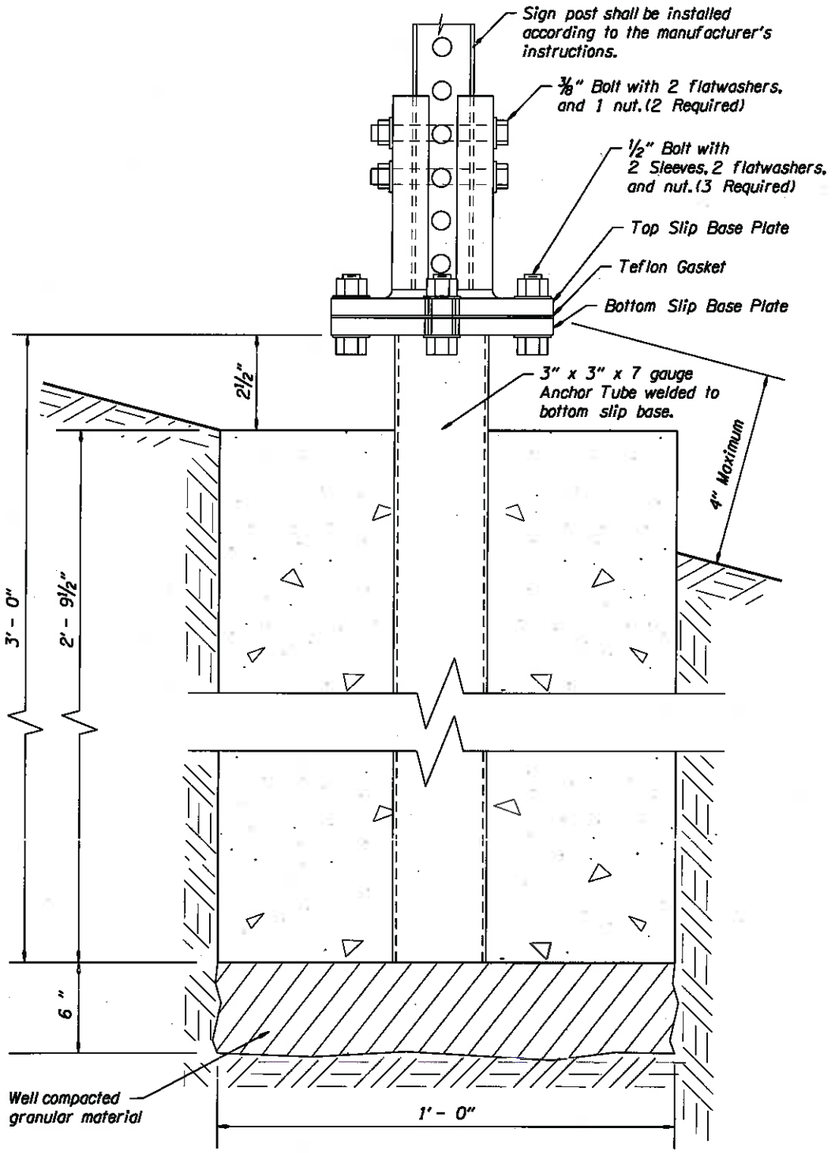
OREGON STANDARD DRAWINGS
PERFORATED STEEL SQUARE TUBE (PSST) ANCHOR FOUNDATION

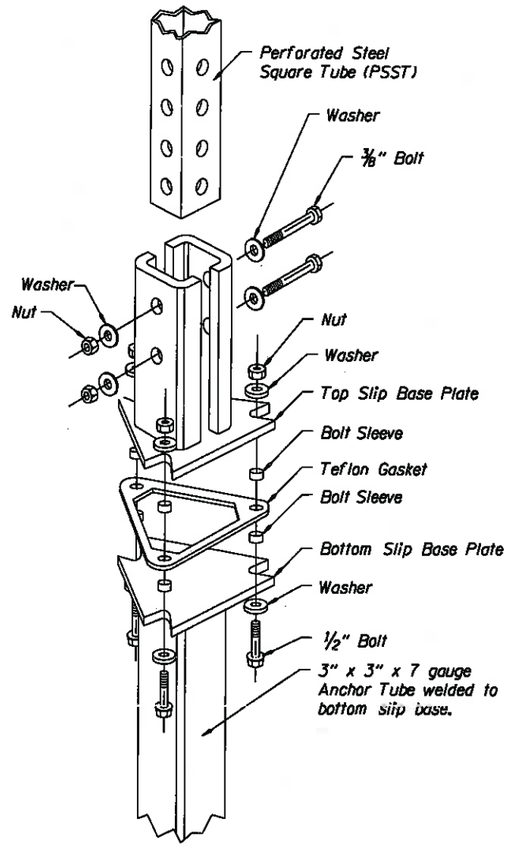
2008

DATE	REVISION DESCRIPTION
01/11	Moved bolts, added ¾" dimensions, and added two direction arrow.
01/12	Added Baseline Report Date.



SLIP BASE ELEVATION

No scale

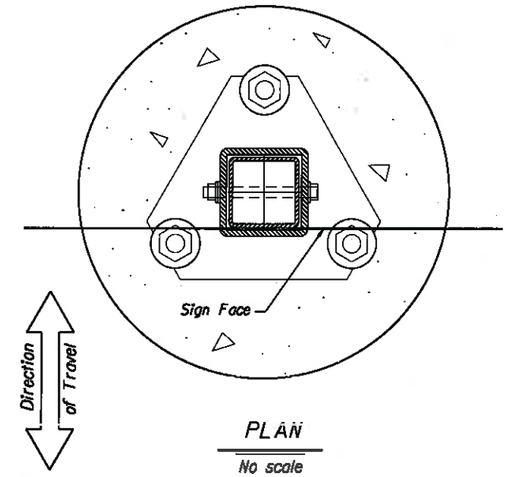


SLIP BASE EXPLODED VIEW

No scale

General Notes:

1. Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.
2. Slip base steel shall be hot dipped galvanized or approved equal.
3. Footing concrete shall be Commercial Grade Concrete (f'c = 3000 psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.
4. Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.
5. All slip bases shall be pre-assembled by the manufacturer and shall be installed according to the manufacturer's instructions.
6. Use slip bases listed on the ODOT Qualified products list or submit crash testing data, installation instructions, and unstamped working drawings according to 00150.35.
7. Slip base details shown are not for a specific manufacturer and are only shown to convey general pieces of a slip base system. Specific slip base material will be acccording to the manufacturer's documentation.



PLAN

No scale

CALC. BOOK NO.	BASELINE REPORT DATE	ACCOMPANIED BY DWGS.	SHEET
5752	06-JAN-2012	TM681, TM687	3 OF 3

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS
PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION

2008

DATE	REVISION DESCRIPTION
01/11	Added two-direction arrow.
01/12	Added Baseline Report Date.

★ Use Pre-Construction Posted Speed to Select the Correct Design Speed from the Tables below:

CONCRETE BARRIER FLARE RATE TABLE	
★ SPEED (mph)	MINIMUM FLARE RATE
≤ 30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1

MINIMUM LENGTHS TABLE					
★ Speed (mph)	★ TAPER "L" (ft) W = Width being closed. (Lane or Shoulder)				BUFFER "B" (ft)
	W ≤10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	800	210
55	550	660	770	880	250
60	600	720	840	960	285
65	650	780	910	1040	325

NOTE:

- For Lane or Shoulder closure where W < 10' , Use "L" value for W = 10'

★ Use 1000 feet for freeway lane closure taper lengths, See Drgs. TM860, TM861, and TM862

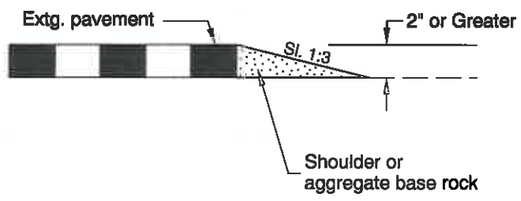
TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE				
★ Speed (mph)	Sign Spacing (ft)			Max. Channelizing Device Spacing (ft)
	A	B	C	
20 - 30	100	100	100	20
35 - 40	350	350	350	20
45 - 55	500	500	500	40
Freeway	1000	1500	2640	40

NOTE:

- Place traffic control devices on 10 ft. spacings for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 20% of the "A" dimension for speeds < 45 mph. Limit spacing adjustments to 10% of the "A" dimension for speeds ≥ 45 mph.

NOTES:

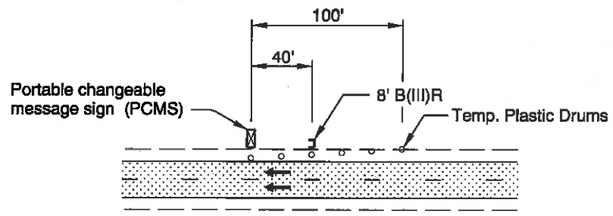
- When paved shoulders adjacent to excavations are less than four feet wide protect abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



EXCAVATION ABRUPT EDGE

NOTES:

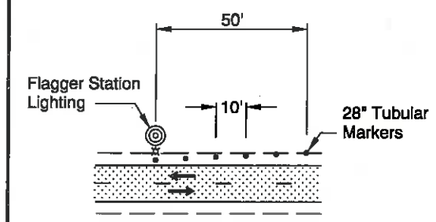
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R Left shoulder, use Type B(III)L
- Use six drums in shoulder taper on 20' spacing.
- Detail as shown is also used for Portable Traffic Signal installation and Portable Traffic Management System.



PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION DETAIL

NOTES:

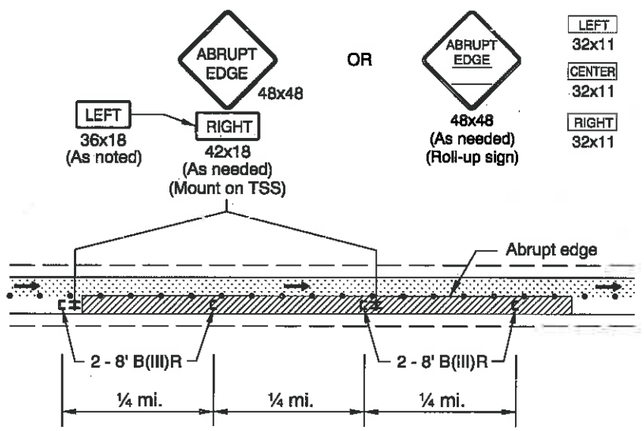
- Install Flagger Station Lighting beyond the outside shoulder, when possible.
- Use six tubular markers in shoulder taper on 10' spacing.



FLAGGER STATION LIGHTING DELINEATION

NOTES:

- Abrupt edges may be created by paving, operations, excavations or other roadway work. Use abrupt edge signing for abrupt edges of 1 inch or greater.
- If the excavation is located on left side of traffic, replace the 8' B(III)R barricades with 8' B(III)L barricades and replace the "RIGHT" (CW21-8C-18) riders with "LEFT" (CW21-8A-18) riders.
- Continue signing and other traffic control devices throughout excavation area at spacings shown.
- If roll-up signs are used, attach the correct (CW21-9-11) plaques to the sign face using hook and loop fasteners. Place roll-up signs in advance of barricades.



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:

- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place Temporary Sign Support (TSS) approx. 10' behind barricade.
- Place Portable Changeable Message Sign (PCMS) approx. 40' behind barricade.
- Place sequential arrow approx. 20' behind barricade for posted speeds less than 45 mph.
- Place sequential arrow approx. 40' behind barricade for posted speeds 45 mph or greater.
- For work duration of greater than 3 days, remove or cover existing pavement markings, as directed.
- Arrows shown in roadway are not pavement legends, but directional arrows to indicate traffic movements.
- All signs are type "O4" flourescent orange, unless otherwise shown.

o o o Temp. Plastic Drums See TCD Spacing Table for max. spacing.

• • • 28" Tubular Markers See TCD Spacing Table for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

To be accompanied by Drg. Nos. TM820 & TM821

CALC. BOOK NO. TM09-01

BASELINE REPORT DATE 01-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

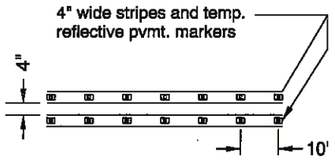
TABLES, ABRUPT EDGE AND PCMS DETAILS

2008

DATE	REVISION DESCRIPTION
01-01-2010	REVISED DRAWING AND NOTES
01-01-2011	REVISED NOTES
07-01-2011	REVISED AND ADDED NOTES
01-01-2012	REVISED NOTES AND ADDED DRAWING
07-01-2012	REVISED DRAWING AND NOTES

tm800.dgn 01-JUL-2012

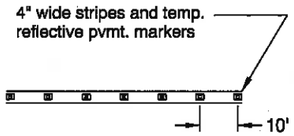
TM800



LAYOUT "A"
(Supplemented double solid lines)

TYPICAL APPLICATIONS:

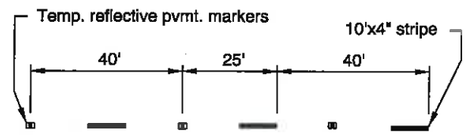
- To prohibit lane changes or passing (include appropriate signing).
- Freeway or multilane shifts and crossovers.
- For projects in place through winter months.



LAYOUT "B"
(Supplemented solid line)

TYPICAL APPLICATIONS:

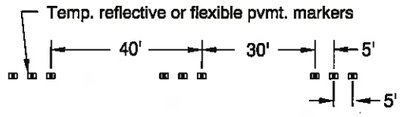
- Alignment shifts or crossovers.
- To discourage lane changes in multilane sections.
- For projects in place through winter months.



LAYOUT "C"
(Supplemented broken lines)

TYPICAL APPLICATIONS:

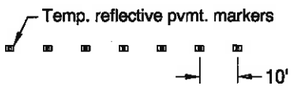
- Freeway and multilane broken lines.
- High ADT 2 lane roads (greater than 10,000).
- For projects in place through winter months.



LAYOUT "D"
(Simulated broken lines)

TYPICAL APPLICATIONS:

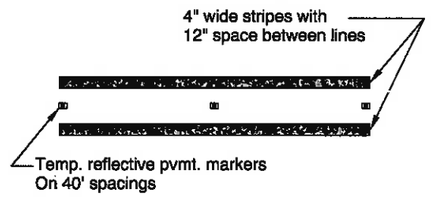
- During staging on finished/existing surfaces.
- HMAC intermediate surfaces.
- Emulsified asphalt surface treatments (chip seals) where permanent pavement markings cannot be placed within two weeks.



LAYOUT "E"
(Simulated solid lines)

TYPICAL APPLICATIONS:

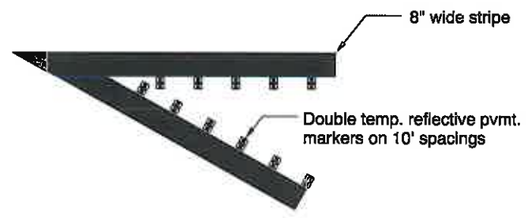
- Alignment shifts or crossovers.
- To discourage lane changes in multilane sections.
- Edge lines for short durations, less than 14 days.



LAYOUT "F"
(Double solid lines positioning guide)

TYPICAL APPLICATIONS:

- To prohibit passing (include appropriate signing).
- 2 lane, 2 way centerlines.



LAYOUT "G"
(Supplemented solid line)

TYPICAL APPLICATIONS:

- Gore area

GENERAL NOTES FOR ALL DETAILS:

- Yellow Bi-Directional Pavement Markers required for Two-Way Traffic.
- Supplemented lines are painted lines enhanced with Reflective Pavement Markers.
- Simulated lines are Reflective Pavement Markers placed in a pattern to substitute for a painted line.
- Pavement markings colors shall conform to MUTCD.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

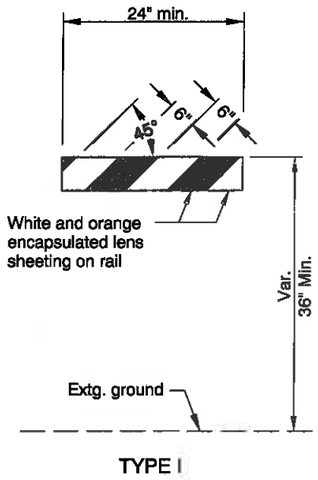
TEMPORARY PAVEMENT MARKINGS

2008

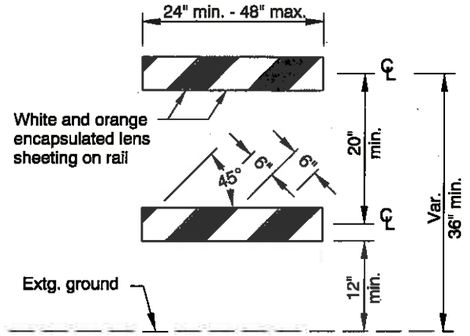
DATE	REVISION DESCRIPTION
01-01-2010	REVISED DRAWING AND NOTES
07-01-2011	ADDED NOTE
07-01-2012	REVISED DRAWING AND NOTES

tm810.dgn 01-JUL-2012

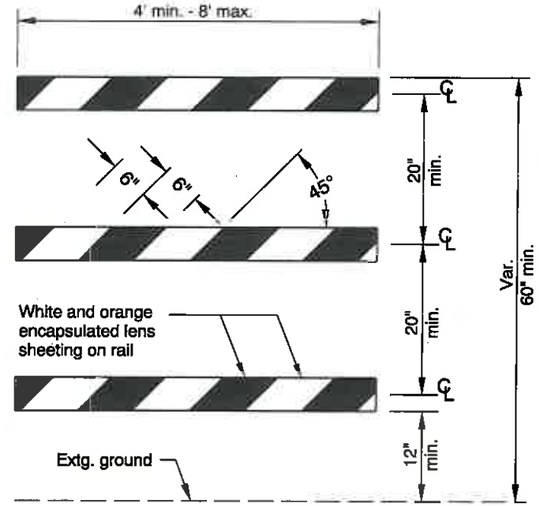
TM810



TYPE I



TYPE II



TYPE III

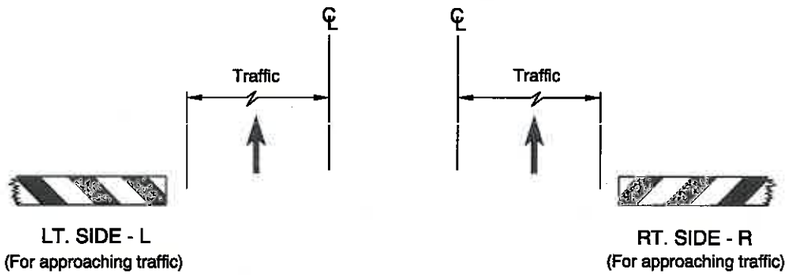
BARRICADE RAIL LAYOUT

GENERAL NOTES FOR ALL DETAILS:

- All non-reflectorized surfaces shall be white.
- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.

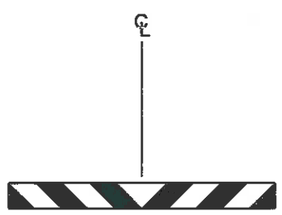
NOTES:

- Markings for barricade rails shall slope downward at an angle of 45° in the direction traffic is to pass.
- Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring.
- Where both right and left turns are provided for, slope the chevron striping downward in both directions from the center of the barricade.
- For full roadway closures, the C or LR barricade may be used. Extend barricades completely across roadway unless access is required for local road users.

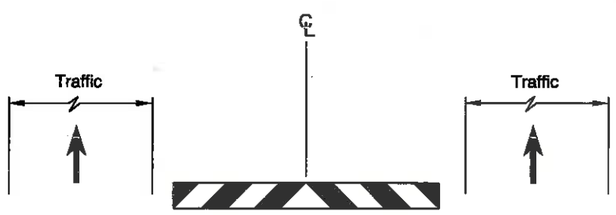


LT. SIDE - L
(For approaching traffic)

RT. SIDE - R
(For approaching traffic)

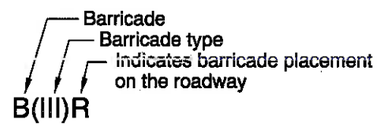


CLOSED - C
(For approaching traffic)



LT. / RT. - LR
(For approaching traffic)

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING



BARRICADE NOTATION

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JUL-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

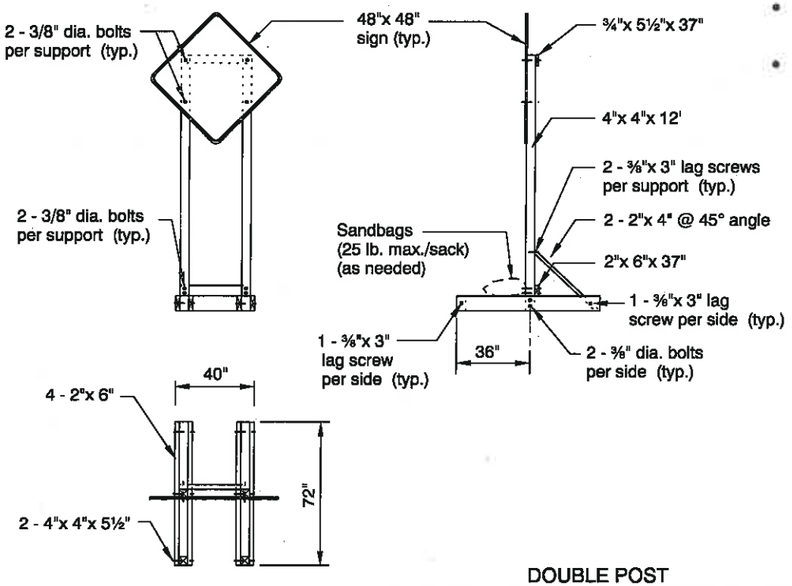
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

TEMPORARY BARRICADES

2008

DATE	REVISION DESCRIPTION
07-01-2011	REVISED AND ADDED DRAWINGS AND NOTES

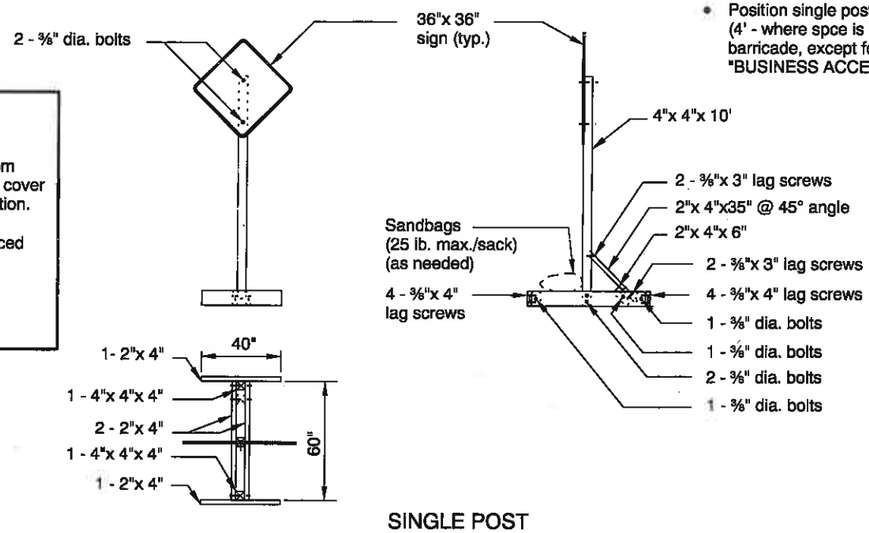


NOTES:

- Use Double Post TSS for a total sign area of 40 sq. ft. or less.
- Position double post TSS 10' behind an 8' (4' - where space is limited) Type (III) barricade, unless otherwise shown.

- DO NOT TIP OVER TSS.
- When not in use, locate TSS a minimum of 30' from the roadway and turn away from traffic; or, turn or cover sign and retain the Type (III) barricade for delineation.
- Use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail for sign installation heights.

DOUBLE POST
TEMPORARY SIGN SUPPORT (TSS)



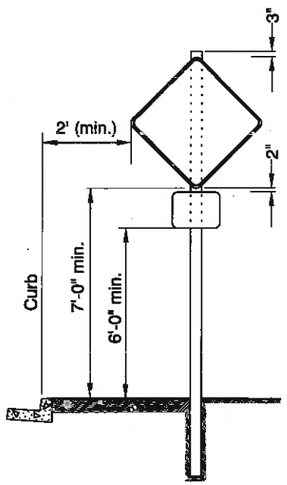
NOTES:

- Use Single Post TSS for a total sign area of 9 sq. ft. or less.
- Position single post TSS 10' behind an 8' (4' - where spce is limited) Type (III) barricade, except for installation of "BUSINESS ACCESS" signs.

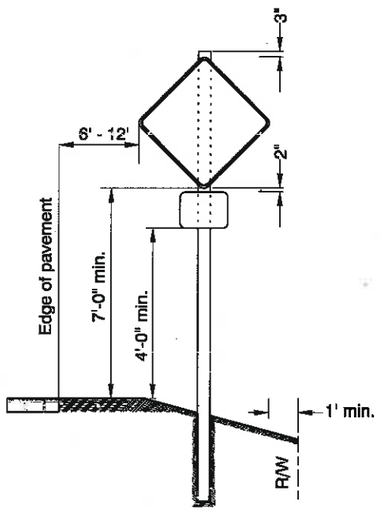
SINGLE POST
TEMPORARY SIGN SUPPORT (TSS)

NOTE:

- Avoid locating sign supports in areas designated for bicycle or pedestrian traffic. When TSS or post mounted signs are located on or over a sidewalk or bicycle facility, install secondary sign (rider) at a minimum height of 7'-0" from top of sidewalk or bicycle facility to bottom of rider.

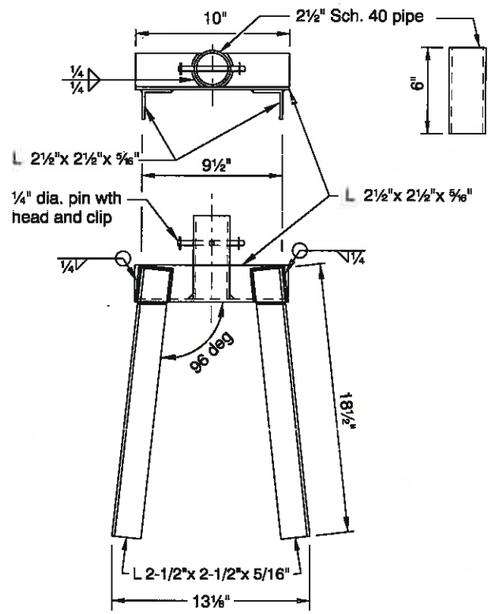


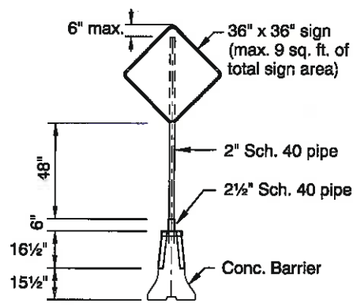
URBAN AREAS WITH CURB



URBAN AREAS - NO CURB
RURAL AREAS - CURB OR NO CURB

TEMPORARY SIGN PLACEMENT





NOTES:

- Drill additional holes so sign can be rotated 90 degrees and pinned when not in use.
- All structural steel shall conform to ASTM A36.
- Support fits both 32" and 42" tall "F" barrier.
- Use for supporting a maximum 9 sq. ft. of total sign area.
- Place support at connection between two concrete barrier sections.
- Weld steel according to American Welding Society (AWS) D.1.1.
- Do not use clipped signs.

CONCRETE BARRIER SIGN SUPPORT

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JUL-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

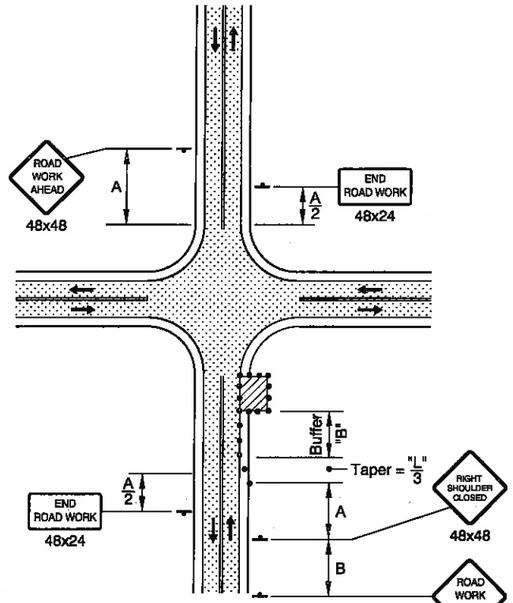
TEMPORARY SIGN SUPPORTS

2008

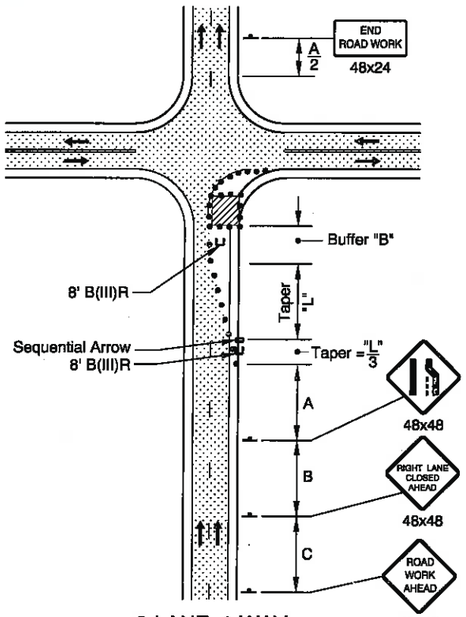
DATE	REVISION DESCRIPTION
01-01-2010	REVISED NOTES
01-01-2011	REVISED DRAWING AND NOTES
07-01-2011	REVISED DRAWING AND NOTES
01-01-2012	REVISED DRAWING
07-01-2012	REVISED NOTES

Effective Date: December 1, 2013 - May 31, 2014

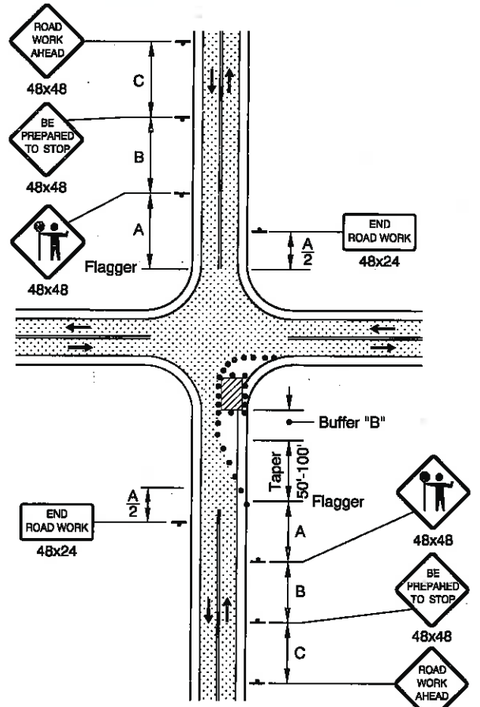
tm841.dgn 01-JUL-2012



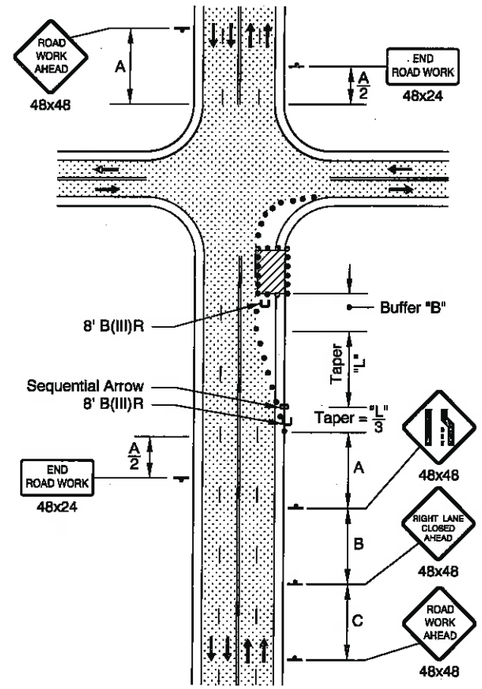
2-LANE, 2-WAY
SHOULDER CLOSURE



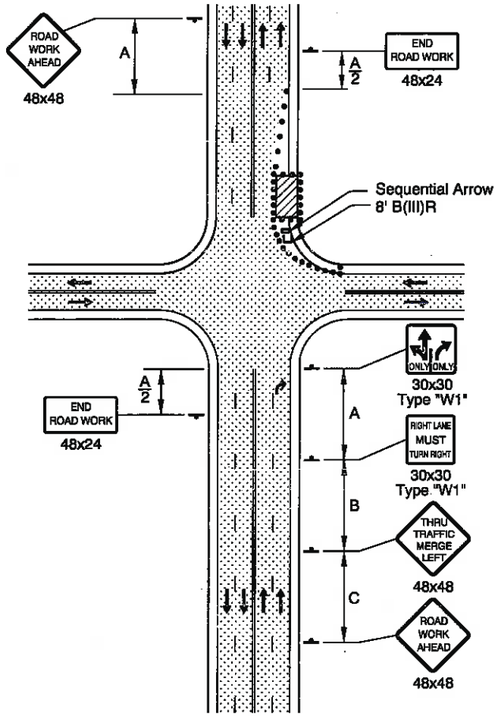
2-LANE, 1-WAY
RIGHT LANE CLOSURE



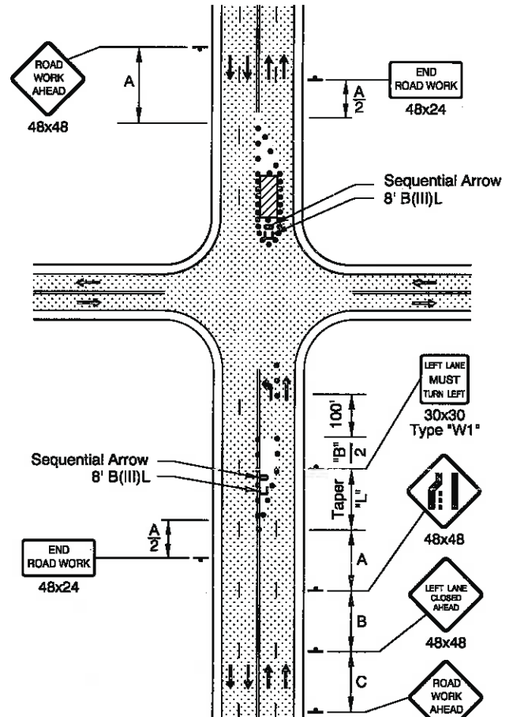
2-LANE, 2-WAY
ONE LANE CLOSURE



4-LANE, 2-WAY
RIGHT LANE CLOSURE, NEAR SIDE



4-LANE, 2-WAY
RIGHT LANE CLOSURE, FAR SIDE



4-LANE, 2-WAY
LEFT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:

- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- The "BE PREPARED TO STOP" sign shall be used only in conjunction with the FLAGGER symbol sign.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Drg. TM800.
- For left lane or shoulder work, place TCD to close left lane or shoulder. Use "LEFT LANE CLOSED AHEAD" sign, "LEFT LANE ENDS" (W4-2L) symbol sign, or "LEFT SHOULDER CLOSED" sign, where applicable.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. TM800.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" sign in advance of the intersection at sign spacing A.
- Use plastic drums in lane closure tapers when the posted speed is 45 mph or greater.
- Where shoulder width is limited, Sequential Arrow may be placed within the lane closure taper.

• • • • • 28" Tubular Markers
See TCD Spacing Table on TM800 for max. spacings.

• • • 28" Tubular Markers
See TCD Spacing Table on TM800 for max. spacings.

UNDER TRAFFIC

UNDER CONSTRUCTION

To be accompanied by Drg. Nos. TM820, TM821 & TM840

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JUL-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

INTERSECTION WORK ZONE DETAILS

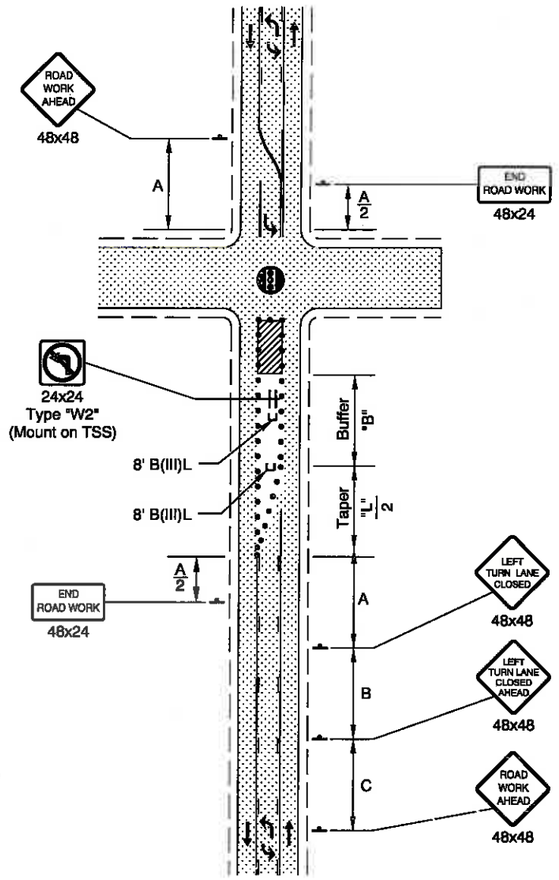
2008

DATE	REVISION DESCRIPTION
07-01-2011	REVISED DRAWING AND NOTES
07-01-2012	REVISED DRAWING

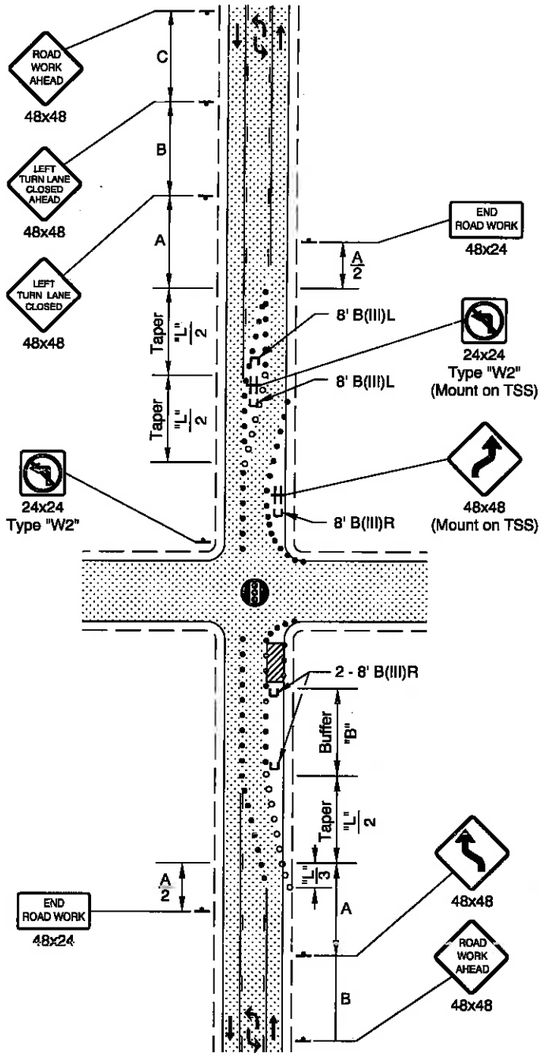
Effective Date: December 1, 2013 - May 31, 2014

TM841

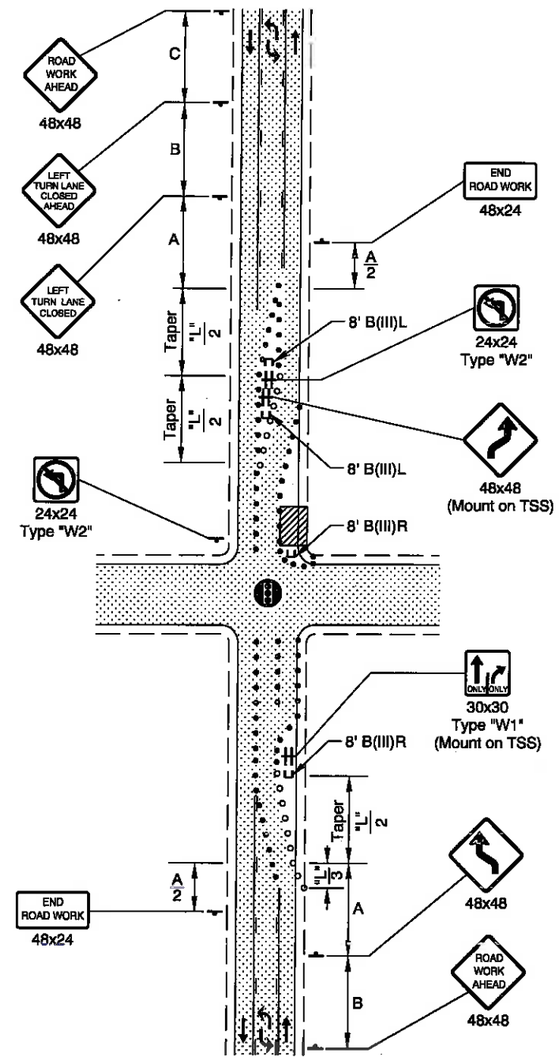
TM841



2-LANE, 2-WAY ROADWAY WITH LEFT TURN MEDIAN
LEFT TURN MEDIAN CLOSURE



2-LANE, 2-WAY ROADWAY WITH LEFT TURN MEDIAN
RIGHT LANE CLOSURE, NEAR SIDE



2-LANE, 2-WAY ROADWAY WITH LEFT TURN MEDIAN
RIGHT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:

- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- To determine Taper Length ("L") and Buffer Length ("B") shown on this sheet, use the "MINIMUM LENGTHS TABLE" on Drg. TM800.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" sign in advance of the intersection at sign spacing A.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. TM800.
- Tubular markers may be used in lane closure tapers where the posted speed is less than 45 mph.

Signal

28" Tubular Markers
See TCD Spacing Table on TM800 for max. spacing

Temp. Plastic Drums
See TCD Spacing Table on TM800 for max. spacing

UNDER TRAFFIC

UNDER CONSTRUCTION

To be accompanied by Drg. Nos. TM820 & TM821

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JUL-2009

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SIGNALIZED INTERSECTION DETAILS

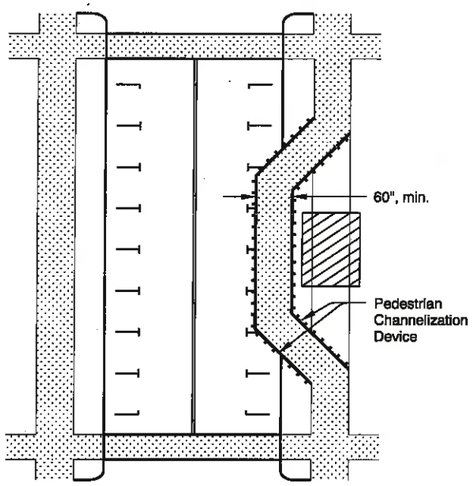
2008

DATE	REVISION DESCRIPTION
07-01-2009	REVISED DRAWING AND NOTES
07-01-2012	REVISED DRAWING

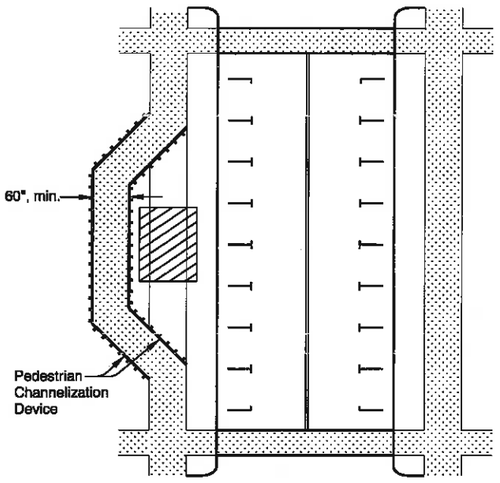
TM842

NOTE:

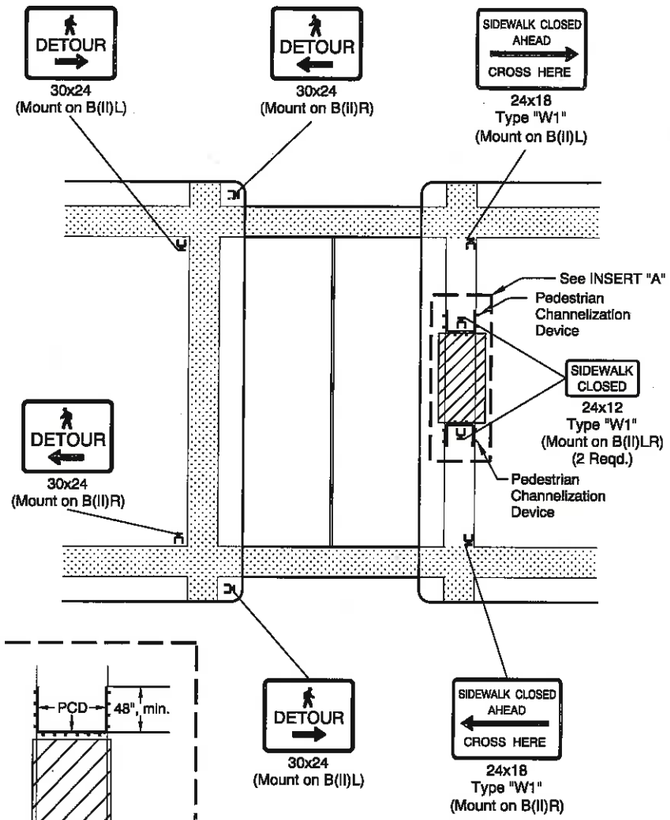
- May be used on roadway with pre-construction posted speeds of less than 40 mph.

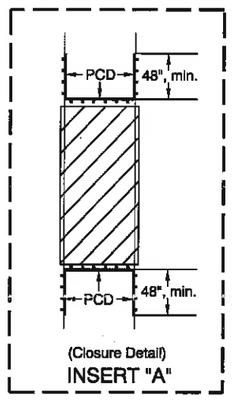


ROADWAY
SIDEWALK DIVERSION



RIGHT OF WAY
SIDEWALK DIVERSION



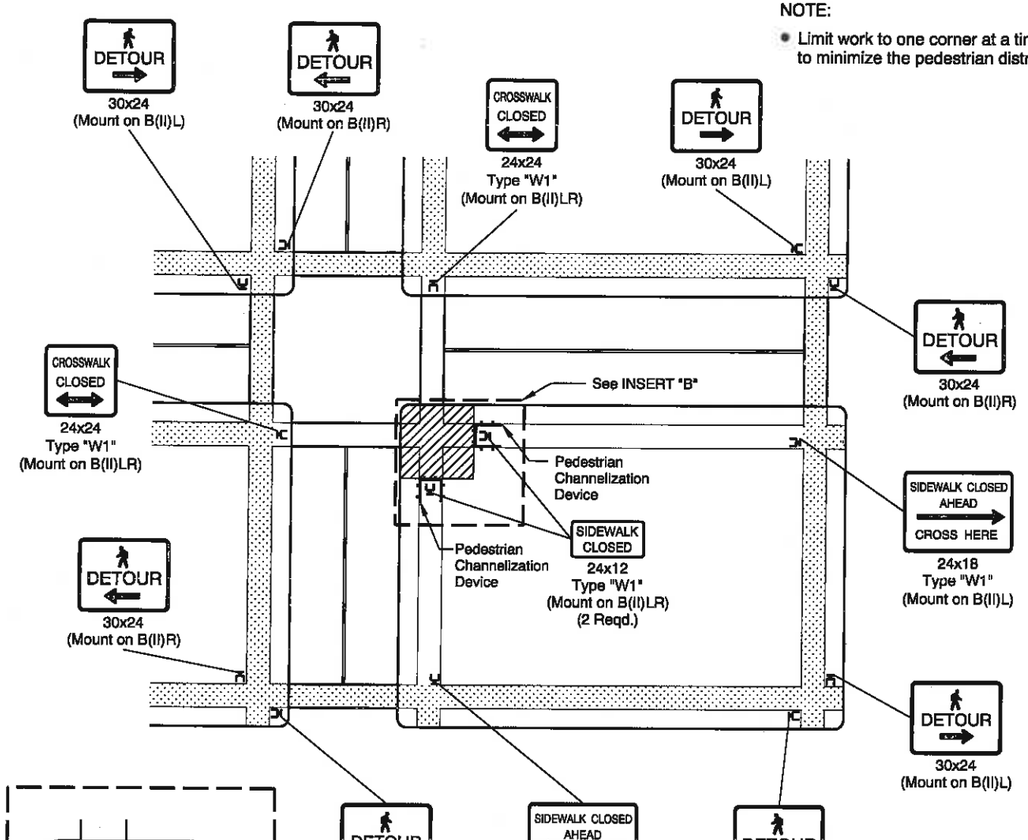


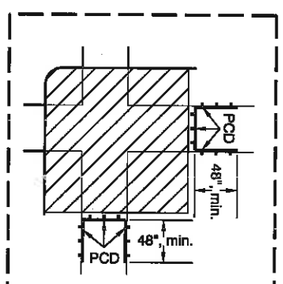
(Closure Detail)
INSERT "A"

SIDEWALK CLOSURE, MIDBLOCK

NOTE:

- Limit work to one corner at a time to minimize the pedestrian distruption.





(Closure Detail)
INSERT "B"

SIDEWALK CLOSURE, CORNER

GENERAL NOTES FOR ALL DETAILS:

- When closing or relocating crosswalks or other pedestrian facilities provide ADA compliant facilities. Include accessibility features consistent with existing pedestrian facilities by providing adequate slope transitions and surfacing.
- Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 60" x 60" passing spaces every 200 feet along the route.
- Only TCD for pedestrians are shown. Other devices may be necessary to control vehicular traffic.
- Stage work, as necessary, to provide a temporary pedestrian access route at all times. For roadways with no available detours, maintain one open sidewalk at all times.
- Minimize pedestrian out-of-direction travel.

UNDER PEDESTRIAN TRAFFIC

UNDER CONSTRUCTION

PEDESTRIAN CHANNELIZATION DEVICE

To be accompanied by Drg. Nos. TM820 & TM821

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2011

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

TEMPORARY PEDESTRIAN ACCESS ROUTING

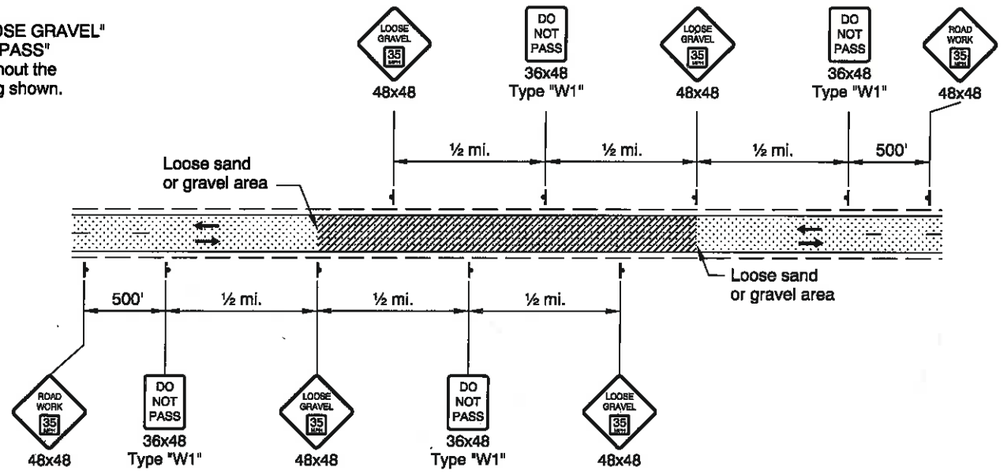
2008

DATE	REVISION DESCRIPTION
07-01-2013	REVISED DRAWING AND NOTES

tm844.dgn 01-JUL-2013

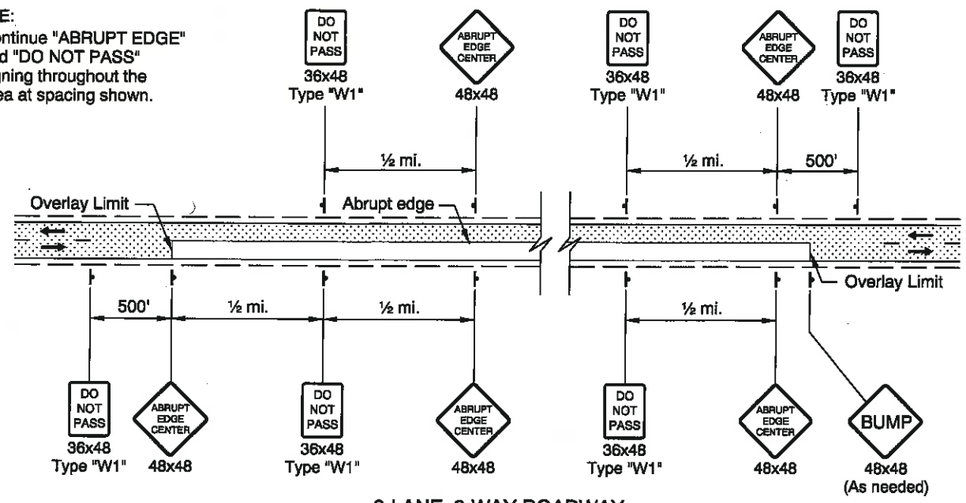
TM844

NOTE:
- Continue "LOOSE GRAVEL" and "DO NOT PASS" signing throughout the area at spacing shown.



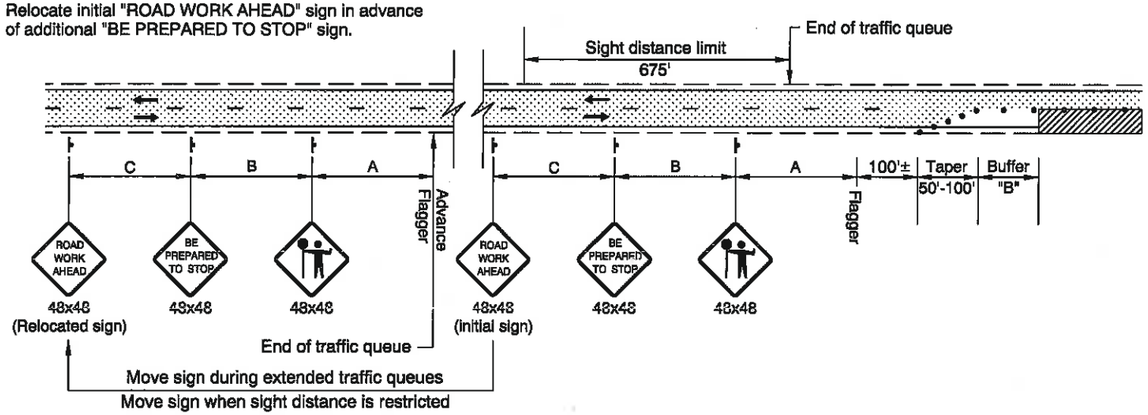
2-LANE, 2-WAY ROADWAY
LOOSE GRAVEL IN ROADWAY

NOTE:
- Continue "ABRUPT EDGE" and "DO NOT PASS" signing throughout the area at spacing shown.



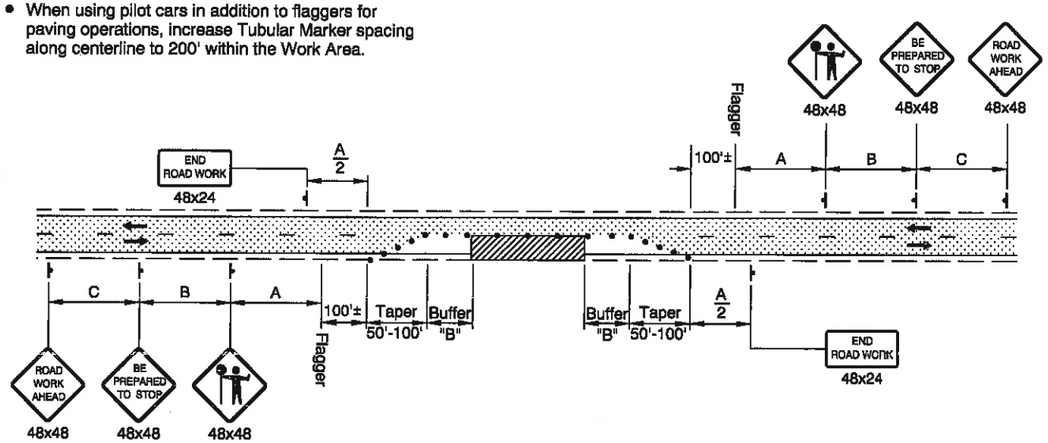
2-LANE, 2-WAY ROADWAY
OVERLAY AREA

NOTES:
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
- Relocate initial "ROAD WORK AHEAD" sign in advance of additional "BE PREPARED TO STOP" sign.



EXTENDED TRAFFIC QUEUES FOR ADVANCE FLAGGING

NOTE:
- When using pilot cars in addition to flaggers for paving operations, increase Tubular Marker spacing along centerline to 200' within the Work Area.



2-LANE, 2-WAY ROADWAY
ONE LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:
- The "FLAGGER" symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" sign.
- Signing and other TCD shown to be installed in conjunction with the work areas, shall move with the work areas.
- Cover existing passing zone signing, as directed.
- Install temporary striping as required.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Drg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. No. TM800.

- • • • • 28" Tubular Markers on 20' max. spacing for flagger tapers.
- • • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.
- UNDER TRAFFIC
- UNDER CONSTRUCTION
- CONSTRUCTION UNDER TRAFFIC

To be accompanied by Drg. Nos. TM821

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2012

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2008

DATE	REVISION DESCRIPTION
07-01-2009	REVISED NOTES
01-01-2010	REVISED NOTES
01-01-2012	REVISED DRAWING