

KEYED NOTES:

1. REMOVE EXISTING AC PAVEMENT.
2. SAWCUT EXISTING AC PAVEMENT/CONCRETE (TYP).
3. REMOVE EXISTING SIGN, SIGN POST, AND FOOTING. SALVAGE EXISTING SIGN.
4. REMOVE EXISTING STRIPING.
5. REMOVE EXISTING CURB.
6. REMOVE EXISTING MAILBOX POST.

SALVAGE EXISTING MAILBOX FOR RELOCATION. COORDINATE WITH USPS TO MAINTAIN MAIL SERVICE THROUGHOUT CONSTRUCTION.
- 7A. REMOVE EXISTING FENCE.
- 7B. REMOVE AND SALVAGE EXISTING FENCE.
8. REMOVE EXISTING CONCRETE SIDEWALK/DRIVEWAY.
9. REMOVE EXISTING CINDER BLOCK WALL.
10. REMOVE EXISTING TREE.
11. REMOVE AC PAVEMENT FOR UTILITY TRENCH RESURFACING.
12. REMOVE EXISTING GRAVEL.
13. MILL AND INLAY.
14. MILL EXISTING SPEED HUMP TO CREATE A SMOOTH ROAD GRADE.
15. RELOCATE EXISTING UTILITY POLE. BY OTHERS.

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE THE REMOVAL OF ALL NECESSARY PRIVATE UTILITIES WITH THE APPROPRIATE UTILITY PROVIDERS.
2. CONTRACTOR TO PROTECT ALL CURB, SIDEWALK, POLES, SIGNS AND ALL OTHER INFRASTRUCTURE NOT CALLED OUT FOR REMOVAL.
3. CONTRACTOR TO ABANDON (IF DISCOVERED) ANY EXISTING WELLS, SEPTIC TANKS, AND DRAIN FIELDS FOUND DURING CONSTRUCTION PER APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
4. CONTRACTOR TO COORDINATE ALL STREET WORK WITH PROPERTY OWNERS AND PROJECT ENGINEER/INSPECTOR.
5. SEE UTILITY PLANS FOR ALL STORM WATER, SANITARY SEWER, AND WATER DEMOLITION INFORMATION.
6. ASPHALT, CONCRETE, CURB, ETC. BEING DEMOLISHED NEAR EXISTING TREES SHOULD BE REMOVED BY STRIPPING MATERIAL TO BARE SOIL, BEING CAREFUL NOT TO DAMAGE TREE ROOTS. EXCAVATION BEYOND STRIPPING ASPHALT, CONCRETE, BASE ROCK, ETC. SHOULD NOT OCCUR. COMPACTION, EXCAVATION, AND EQUIPMENT TRACK WALKING SHOULD BE LIMITED AND CONFINED TO THE LIMITS OF THE SIDEWALK. EQUIPMENT TRACK WALKING SHOULD BE AVOIDED ON PORTIONS OF THE TREE PROTECTION AREA WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED. IF CONSTRUCTION ACCESS IS DESIRED IN AREAS WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED, THEN STEEL PLATES, MULCH, OR OTHER MATERIAL AS APPROVED BY THE PROJECT ENGINEER SHOULD BE PLACED SO AS NOT TO CAUSE EXCESSIVE SOIL COMPACTION.
7. CONTRACTOR TO CONTACT TRIMET AT FOC@TRIMET.ORG A MINIMUM OF 5 DAYS PRIOR TO CLOSURE OF BUS STOP.

LEGEND

EXISTING GROUND CONTOUR (1 FT)		351
EXISTING GROUND CONTOUR (5 FT)		350
SAWCUT		
STRIPING TO BE REMOVED		
EXISTING TREE TO REMAIN		
EXISTING TREE TO BE REMOVED		
EXISTING AC PAVEMENT TO BE REMOVED		
MILL AND INLAY		
UTILITY TRENCH		
EXISTING CONCRETE TO BE REMOVED		
EXISTING GRAVEL TO BE REMOVED		
FENCE TO BE REMOVED		
TREE PROTECTION FENCE		

AKS DRAWING FILE: 8970_C041_DEMO.DWG | LAYOUT: C053

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12065 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM

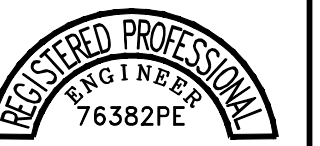
ENGINEERING · SURVEYING · NATURAL RESOURCES
 FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
 AREA IMPROVEMENTS**
 OREGON
 MILWAUKIE
 CLATSOP COUNTY

DEMOLITION PLAN

DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC

DATE: 06/07/2024



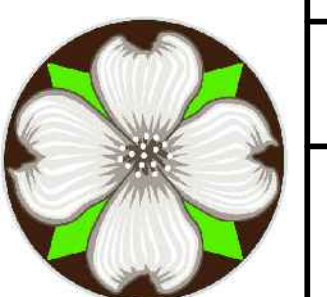
RENEWAL DATE: 12/31/25

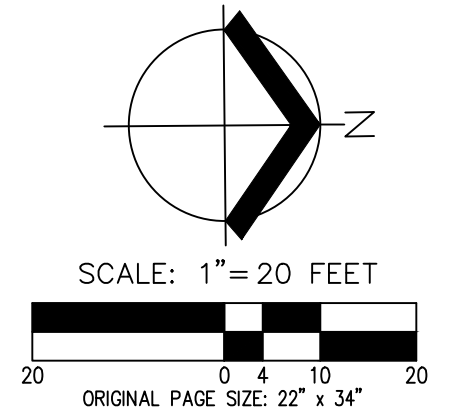
REVISIONS

JOB NUMBER
8970

SHEET

C053



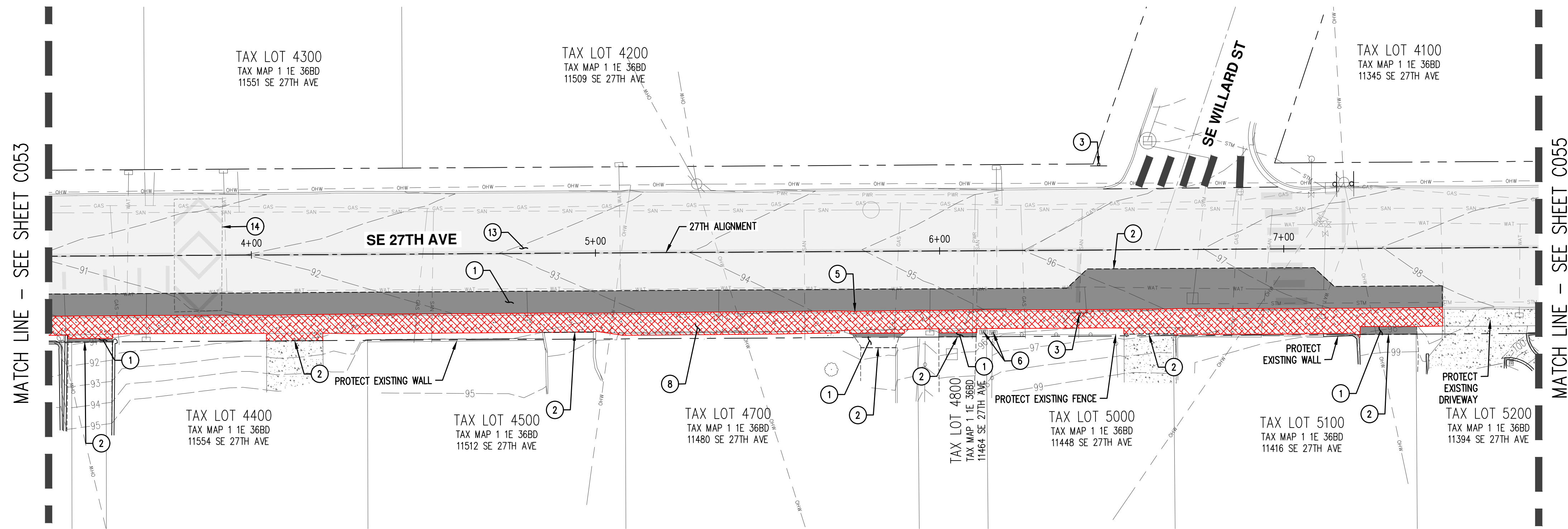


DEMOLITION PLAN

DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC
 DATE: 06/07/2024

REGISTERED PROFESSIONAL
 ENGINEER
 76382PE
 OREGON
 JOHN P. CHRISTIANSEN
 JUNE 29, 2009
 RENEWAL DATE: 12/31/25

JOB NUMBER
8970
 SHEET
C054



KEYED NOTES:

1. REMOVE EXISTING AC PAVEMENT.
2. SAWCUT EXISTING AC PAVEMENT/CONCRETE (TYP).
3. REMOVE EXISTING SIGN, SIGN POST, AND FOOTING. SALVAGE EXISTING SIGN.
4. REMOVE EXISTING STRIPING.
5. REMOVE EXISTING CURB.
6. REMOVE EXISTING MAILBOX POST.

SALVAGE EXISTING MAILBOX FOR RELOCATION. COORDINATE WITH USPS TO MAINTAIN MAIL SERVICE THROUGHOUT CONSTRUCTION.
- 7A. REMOVE EXISTING FENCE.
- 7B. REMOVE AND SALVAGE EXISTING FENCE.
8. REMOVE EXISTING CONCRETE SIDEWALK/DRIVEWAY.
9. REMOVE EXISTING CINDER BLOCK WALL.
10. REMOVE EXISTING TREE.
11. REMOVE AC PAVEMENT FOR UTILITY TRENCH RESURFACING.
12. REMOVE EXISTING GRAVEL.
13. MILL AND INLAY.
14. MILL EXISTING SPEED HUMP TO CREATE A SMOOTH ROAD GRADE.
15. RELOCATE EXISTING UTILITY POLE. BY OTHERS.

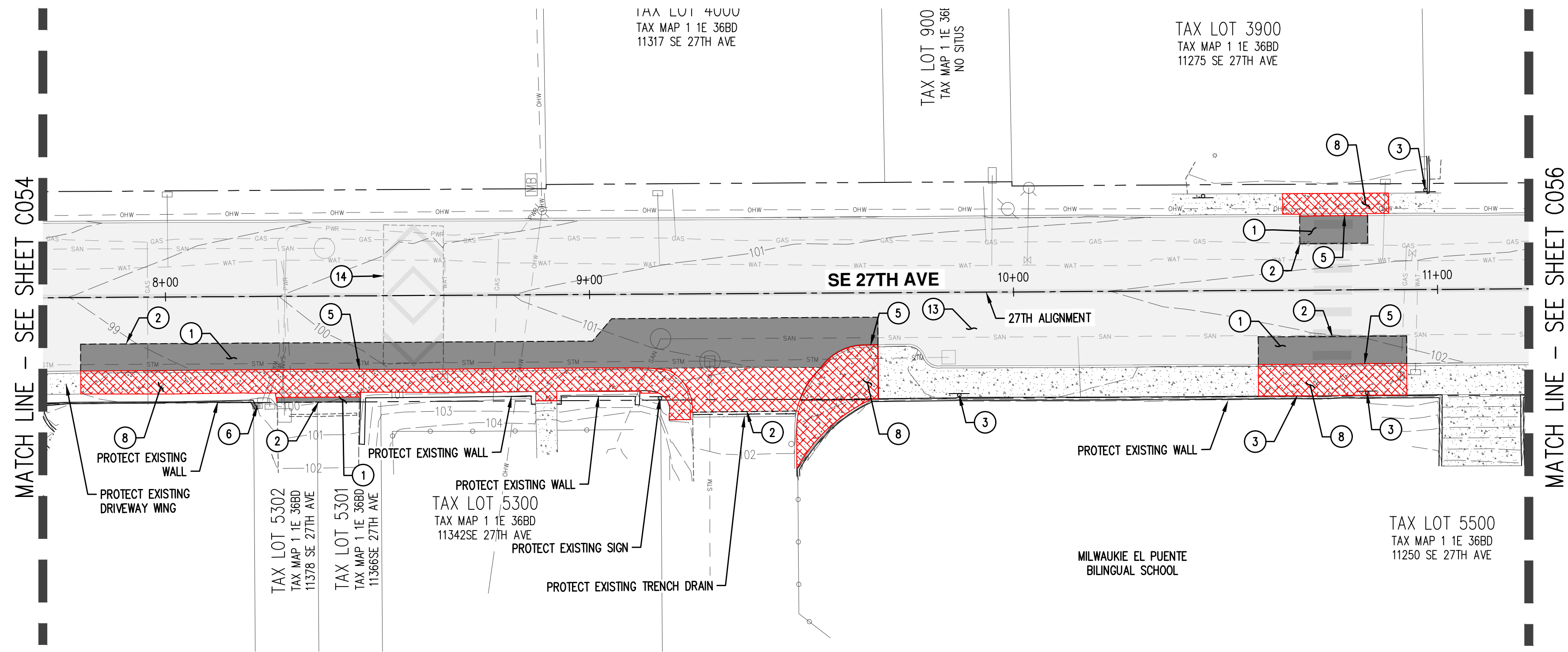
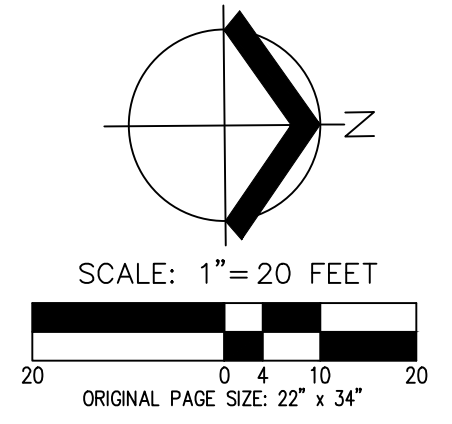
GENERAL NOTES:

1. CONTRACTOR TO COORDINATE THE REMOVAL OF ALL NECESSARY PRIVATE UTILITIES WITH THE APPROPRIATE UTILITY PROVIDERS.
2. CONTRACTOR TO PROTECT ALL CURB, SIDEWALK, POLES, SIGNS AND ALL OTHER INFRASTRUCTURE NOT CALLED OUT FOR REMOVAL.
3. CONTRACTOR TO ABANDON (IF DISCOVERED) ANY EXISTING WELLS, SEPTIC TANKS, AND DRAIN FIELDS FOUND DURING CONSTRUCTION PER APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
4. CONTRACTOR TO COORDINATE ALL STREET WORK WITH PROPERTY OWNERS AND PROJECT ENGINEER/INSPECTOR.
5. SEE UTILITY PLANS FOR ALL STORM WATER, SANITARY SEWER, AND WATER DEMOLITION INFORMATION.
6. ASPHALT, CONCRETE, CURB, ETC. BEING DEMOLISHED NEAR EXISTING TREES SHOULD BE REMOVED BY STRIPPING MATERIAL TO BARE SOIL, BEING CAREFUL NOT TO DAMAGE TREE ROOTS. EXCAVATION BEYOND STRIPPING ASPHALT, CONCRETE, BASE ROCK, ETC. SHOULD NOT OCCUR. COMPACTION, EXCAVATION, AND EQUIPMENT TRACK WALKING SHOULD BE LIMITED AND CONFINED TO THE LIMITS OF THE SIDEWALK. EQUIPMENT TRACK WALKING SHOULD BE AVOIDED ON PORTIONS OF THE TREE PROTECTION AREA WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED. IF CONSTRUCTION ACCESS IS DESIRED IN AREAS WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED, THEN STEEL PLATES, MULCH, OR OTHER MATERIAL AS APPROVED BY THE PROJECT ENGINEER SHOULD BE PLACED SO AS NOT TO CAUSE EXCESSIVE SOIL COMPACTION.
7. CONTRACTOR TO CONTACT TRIMET AT FOC@TRIMET.ORG A MINIMUM OF 5 DAYS PRIOR TO CLOSURE OF BUS STOP.

LEGEND

EXISTING GROUND CONTOUR (1 FT)		351
EXISTING GROUND CONTOUR (5 FT)		350
SAWCUT		
STRIPING TO BE REMOVED		
EXISTING TREE TO REMAIN		
EXISTING TREE TO BE REMOVED		
EXISTING AC PAVEMENT TO BE REMOVED		
MILL AND INLAY		
UTILITY TRENCH		
EXISTING CONCRETE TO BE REMOVED		
EXISTING GRAVEL TO BE REMOVED		
FENCE TO BE REMOVED		
TREE PROTECTION FENCE		





KEYED NOTES:

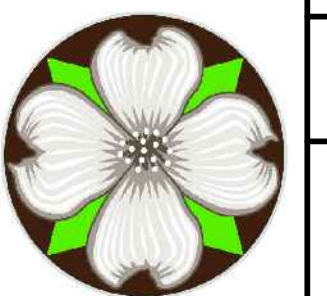
1. REMOVE EXISTING AC PAVEMENT.
2. SAWCUT EXISTING AC PAVEMENT/CONCRETE (TYP).
3. REMOVE EXISTING SIGN, SIGN POST, AND FOOTING. SALVAGE EXISTING SIGN.
4. REMOVE EXISTING STRIPING.
5. REMOVE EXISTING CURB.
6. REMOVE EXISTING MAILBOX POST.
7. REMOVE EXISTING FENCE.
- 7B. REMOVE AND SALVAGE EXISTING FENCE.
8. REMOVE EXISTING CONCRETE SIDEWALK/DRIVEWAY.
9. REMOVE EXISTING CINDER BLOCK WALL.
10. REMOVE EXISTING TREE.
11. REMOVE AC PAVEMENT FOR UTILITY TRENCH RESURFACING.
12. REMOVE EXISTING GRAVEL.
13. MILL AND INLAY.
14. MILL EXISTING SPEED HUMP TO CREATE A SMOOTH ROAD GRADE.
15. RELOCATE EXISTING UTILITY POLE. BY OTHERS.

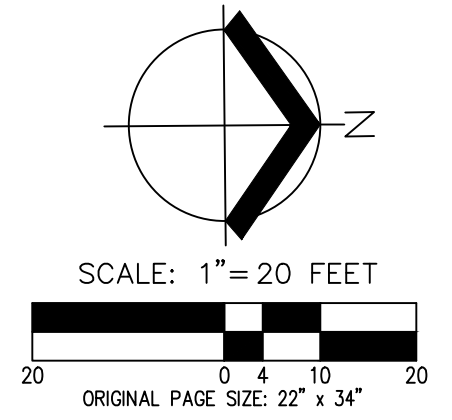
GENERAL NOTES:

1. CONTRACTOR TO COORDINATE THE REMOVAL OF ALL NECESSARY PRIVATE UTILITIES WITH THE APPROPRIATE UTILITY PROVIDERS.
2. CONTRACTOR TO PROTECT ALL CURB, SIDEWALK, POLES, SIGNS AND ALL OTHER INFRASTRUCTURE NOT CALLED OUT FOR REMOVAL.
3. CONTRACTOR TO ABANDON (IF DISCOVERED) ANY EXISTING WELLS, SEPTIC TANKS, AND DRAIN FIELDS FOUND DURING CONSTRUCTION PER APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
4. CONTRACTOR TO COORDINATE ALL STREET WORK WITH PROPERTY OWNERS AND PROJECT ENGINEER/INSPECTOR.
5. SEE UTILITY PLANS FOR ALL STORM WATER, SANITARY SEWER, AND WATER DEMOLITION INFORMATION.
6. ASPHALT, CONCRETE, CURB, ETC. BEING DEMOLISHED NEAR EXISTING TREES SHOULD BE REMOVED BY STRIPPING MATERIAL TO BARE SOIL, BEING CAREFUL NOT TO DAMAGE TREE ROOTS. EXCAVATION BEYOND STRIPPING ASPHALT, CONCRETE, BASE ROCK, ETC. SHOULD NOT OCCUR. COMPACTION, EXCAVATION, AND EQUIPMENT TRACK WALKING SHOULD BE LIMITED AND CONFINED TO THE LIMITS OF THE SIDEWALK. EQUIPMENT TRACK WALKING SHOULD BE AVOIDED ON PORTIONS OF THE TREE PROTECTION AREA WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED. IF CONSTRUCTION ACCESS IS DESIRED IN AREAS WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED, THEN STEEL PLATES, MULCH, OR OTHER MATERIAL AS APPROVED BY THE PROJECT ENGINEER SHOULD BE PLACED SO AS NOT TO CAUSE EXCESSIVE SOIL COMPACTION.
7. CONTRACTOR TO CONTACT TRIMET AT FOC@TRIMET.ORG A MINIMUM OF 5 DAYS PRIOR TO CLOSURE OF BUS STOP.

LEGEND

EXISTING GROUND CONTOUR (1 FT)		351
EXISTING GROUND CONTOUR (5 FT)		350
SAWCUT		
STRIPING TO BE REMOVED		
EXISTING TREE TO REMAIN		
EXISTING TREE TO BE REMOVED		
EXISTING AC PAVEMENT TO BE REMOVED		
MILL AND INLAY		
UTILITY TRENCH		
EXISTING CONCRETE TO BE REMOVED		
EXISTING GRAVEL TO BE REMOVED		
FENCE TO BE REMOVED		
TREE PROTECTION FENCE		



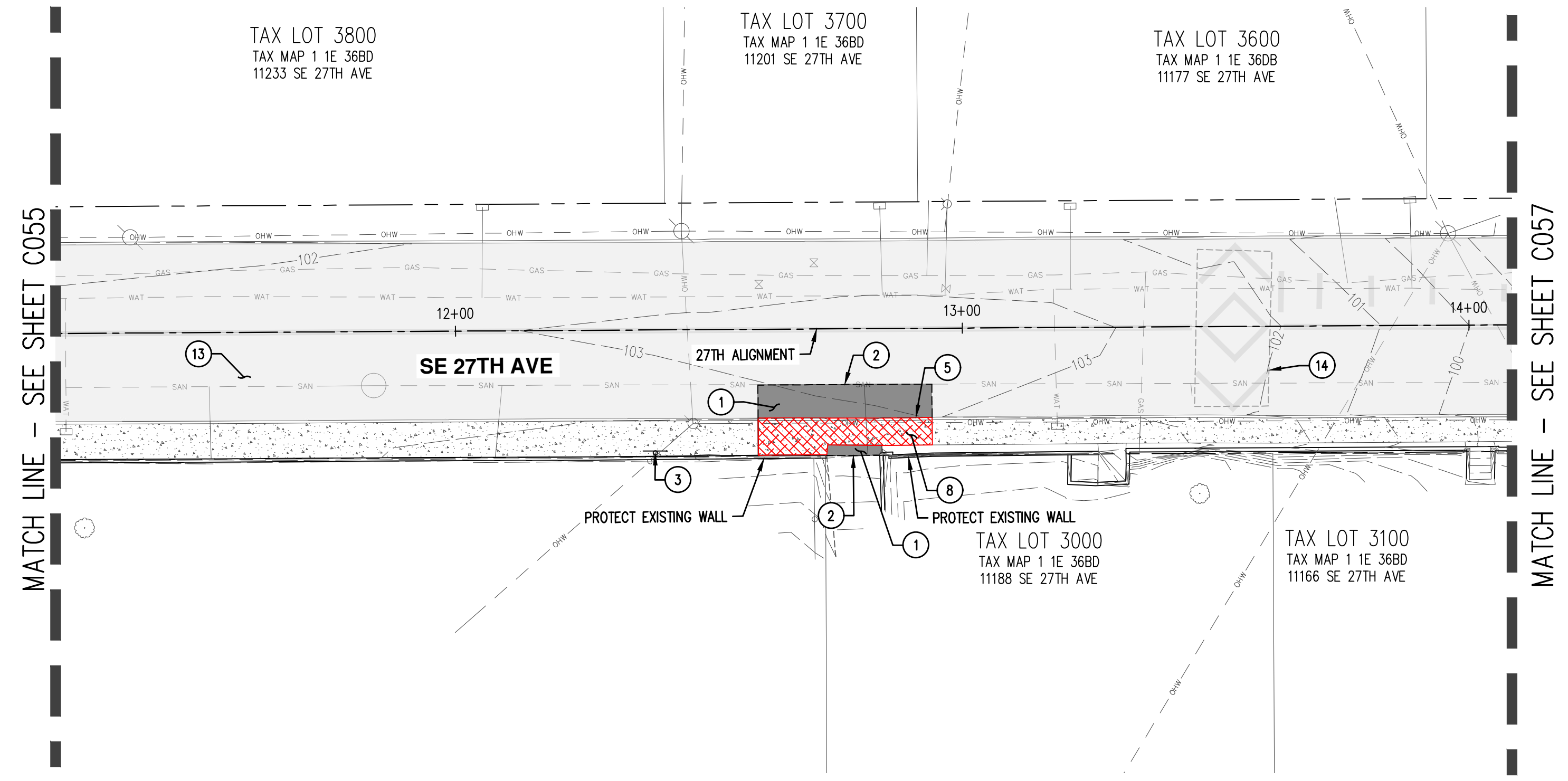


DEMOLITION PLAN

DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC
 DATE: 06/07/2024

 RENEWAL DATE: 12/31/25
 REVISIONS:

JOB NUMBER
8970
 SHEET
C056



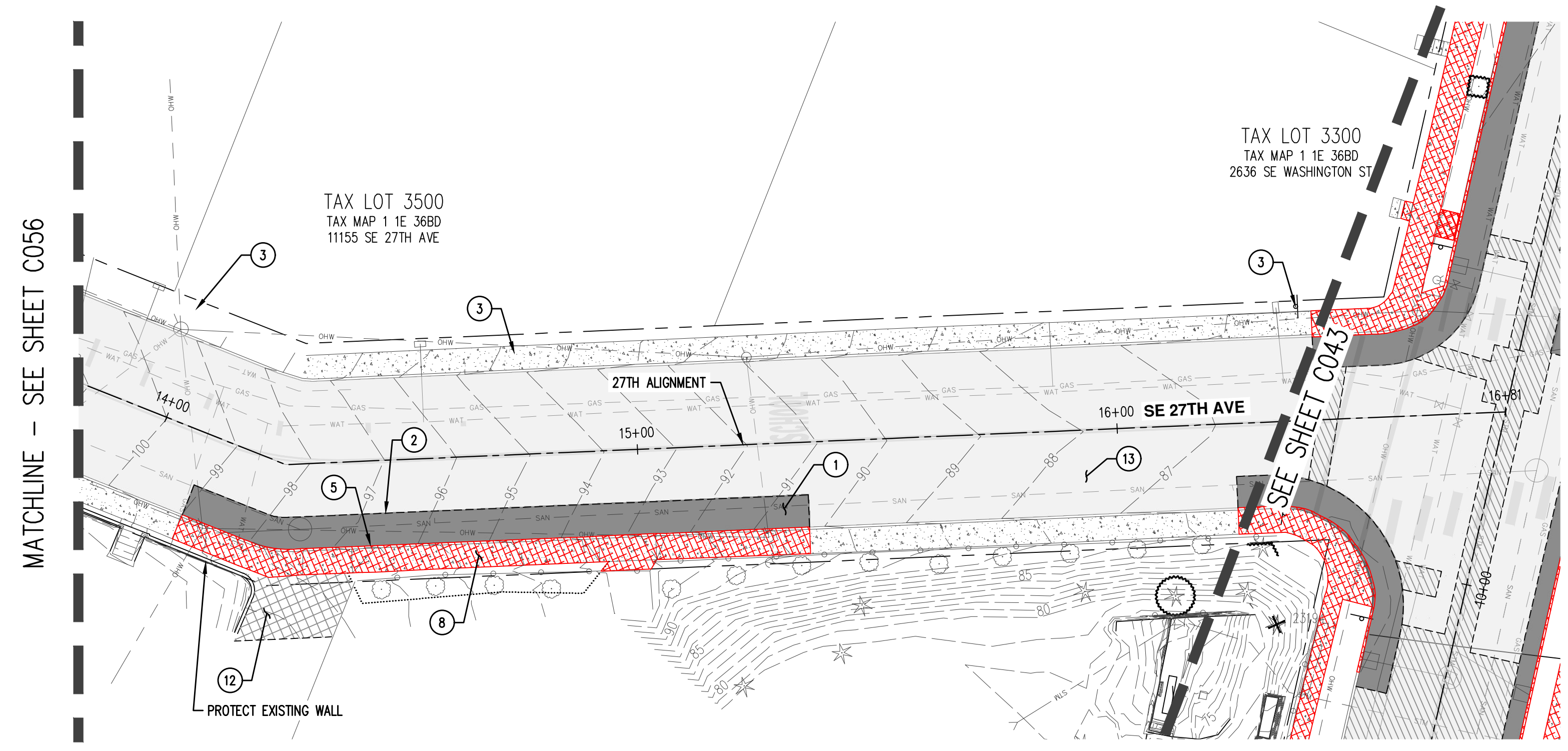
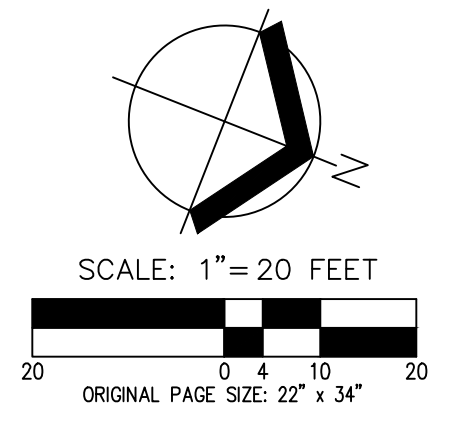
- # KEYED NOTES:**
- REMOVE EXISTING AC PAVEMENT.
 - SAWCUT EXISTING AC PAVEMENT/CONCRETE (TYP).
 - REMOVE EXISTING SIGN, SIGN POST, AND FOOTING. SALVAGE EXISTING SIGN.
 - REMOVE EXISTING STRIPING.
 - REMOVE EXISTING CURB.
 - REMOVE EXISTING MAILBOX POST.
 - SALVAGE EXISTING MAILBOX FOR RELOCATION. COORDINATE WITH USPS TO MAINTAIN MAIL SERVICE THROUGHOUT CONSTRUCTION.
 - REMOVE EXISTING FENCE.
 - REMOVE AND SALVAGE EXISTING FENCE.
 - REMOVE EXISTING CONCRETE SIDEWALK/DRIVEWAY.
 - REMOVE EXISTING CINDER BLOCK WALL.
 - REMOVE EXISTING TREE.
 - REMOVE AC PAVEMENT FOR UTILITY TRENCH RESURFACING.
 - REMOVE EXISTING GRAVEL.
 - MILL AND INLAY.
 - MILL EXISTING SPEED HUMP TO CREATE A SMOOTH ROAD GRADE.
 - RELOCATE EXISTING UTILITY POLE. BY OTHERS.

- GENERAL NOTES:**
- CONTRACTOR TO COORDINATE THE REMOVAL OF ALL NECESSARY PRIVATE UTILITIES WITH THE APPROPRIATE UTILITY PROVIDERS.
 - CONTRACTOR TO PROTECT ALL CURB, SIDEWALK, POLES, SIGNS AND ALL OTHER INFRASTRUCTURE NOT CALLED OUT FOR REMOVAL.
 - CONTRACTOR TO ABANDON (IF DISCOVERED) ANY EXISTING WELLS, SEPTIC TANKS, AND DRAIN FIELDS FOUND DURING CONSTRUCTION PER APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
 - CONTRACTOR TO COORDINATE ALL STREET WORK WITH PROPERTY OWNERS AND PROJECT ENGINEER/INSPECTOR.
 - SEE UTILITY PLANS FOR ALL STORM WATER, SANITARY SEWER, AND WATER DEMOLITION INFORMATION.
 - ASPHALT, CONCRETE, CURB, ETC. BEING DEMOLISHED NEAR EXISTING TREES SHOULD BE REMOVED BY STRIPPING MATERIAL TO BARE SOIL, BEING CAREFUL NOT TO DAMAGE TREE ROOTS. EXCAVATION BEYOND STRIPPING ASPHALT, CONCRETE, BASE ROCK, ETC. SHOULD NOT OCCUR. COMPACTION, EXCAVATION, AND EQUIPMENT TRACK WALKING SHOULD BE LIMITED AND CONFINED TO THE LIMITS OF THE SIDEWALK. EQUIPMENT TRACK WALKING SHOULD BE AVOIDED ON PORTIONS OF THE TREE PROTECTION AREA WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED. IF CONSTRUCTION ACCESS IS DESIRED IN AREAS WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED, THEN STEEL PLATES, MULCH, OR OTHER MATERIAL AS APPROVED BY THE PROJECT ENGINEER SHOULD BE PLACED SO AS NOT TO CAUSE EXCESSIVE SOIL COMPACTION.
 - CONTRACTOR TO CONTACT TRIMET AT FOC@TRIMET.ORG A MINIMUM OF 5 DAYS PRIOR TO CLOSURE OF BUS STOP.

LEGEND

EXISTING GROUND CONTOUR (1 FT)		351
EXISTING GROUND CONTOUR (5 FT)		350
SAWCUT		
STRIPING TO BE REMOVED		
EXISTING TREE TO REMAIN		
EXISTING TREE TO BE REMOVED		
EXISTING AC PAVEMENT TO BE REMOVED		
MILL AND INLAY		
UTILITY TRENCH		
EXISTING CONCRETE TO BE REMOVED		
EXISTING GRAVEL TO BE REMOVED		
FENCE TO BE REMOVED		
TREE PROTECTION FENCE		





- KEYED NOTES:**
- REMOVE EXISTING AC PAVEMENT.
 - SAWCUT EXISTING AC PAVEMENT/CONCRETE (TYP).
 - REMOVE EXISTING SIGN, SIGN POST, AND FOOTING. SALVAGE EXISTING SIGN.
 - REMOVE EXISTING STRIPING.
 - REMOVE EXISTING CURB.
 - REMOVE EXISTING MAILBOX POST.

SALVAGE EXISTING MAILBOX FOR RELOCATION. COORDINATE WITH USPS TO MAINTAIN MAIL SERVICE THROUGHOUT CONSTRUCTION.
 - REMOVE EXISTING FENCE.
 - REMOVE AND SALVAGE EXISTING FENCE.
 - REMOVE EXISTING CONCRETE SIDEWALK/DRIVEWAY.
 - REMOVE EXISTING CINDER BLOCK WALL.
 - REMOVE EXISTING TREE.
 - REMOVE AC PAVEMENT FOR UTILITY TRENCH RESURFACING.
 - REMOVE EXISTING GRAVEL.
 - MILL AND INLAY.
 - MILL EXISTING SPEED HUMP TO CREATE A SMOOTH ROAD GRADE.
 - RELOCATE EXISTING UTILITY POLE. BY OTHERS.

- GENERAL NOTES:**
- CONTRACTOR TO COORDINATE THE REMOVAL OF ALL NECESSARY PRIVATE UTILITIES WITH THE APPROPRIATE UTILITY PROVIDERS.
 - CONTRACTOR TO PROTECT ALL CURB, SIDEWALK, POLES, SIGNS AND ALL OTHER INFRASTRUCTURE NOT CALLED OUT FOR REMOVAL.
 - CONTRACTOR TO ABANDON (IF DISCOVERED) ANY EXISTING WELLS, SEPTIC TANKS, AND DRAIN FIELDS FOUND DURING CONSTRUCTION PER APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
 - CONTRACTOR TO COORDINATE ALL STREET WORK WITH PROPERTY OWNERS AND PROJECT ENGINEER/INSPECTOR.
 - SEE UTILITY PLANS FOR ALL STORM WATER, SANITARY SEWER, AND WATER DEMOLITION INFORMATION.
 - ASPHALT, CONCRETE, CURB, ETC. BEING DEMOLISHED NEAR EXISTING TREES SHOULD BE REMOVED BY STRIPPING MATERIAL TO BARE SOIL, BEING CAREFUL NOT TO DAMAGE TREE ROOTS. EXCAVATION BEYOND STRIPPING ASPHALT, CONCRETE, BASE ROCK, ETC. SHOULD NOT OCCUR. COMPACTION, EXCAVATION, AND EQUIPMENT TRACK WALKING SHOULD BE LIMITED AND CONFINED TO THE LIMITS OF THE SIDEWALK. EQUIPMENT TRACK WALKING SHOULD BE AVOIDED ON PORTIONS OF THE TREE PROTECTION AREA WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED. IF CONSTRUCTION ACCESS IS DESIRED IN AREAS WHERE ASPHALT, CONCRETE, ETC. HAS BEEN REMOVED, THEN STEEL PLATES, MULCH, OR OTHER MATERIAL AS APPROVED BY THE PROJECT ENGINEER SHOULD BE PLACED SO AS NOT TO CAUSE EXCESSIVE SOIL COMPACTION.
 - CONTRACTOR TO CONTACT TRIMET AT FOC@TRIMET.ORG A MINIMUM OF 5 DAYS PRIOR TO CLOSURE OF BUS STOP.

LEGEND

EXISTING GROUND CONTOUR (1 FT)		351
EXISTING GROUND CONTOUR (5 FT)		350
SAWCUT		
STRIPING TO BE REMOVED		
EXISTING TREE TO REMAIN		
EXISTING TREE TO BE REMOVED		
EXISTING AC PAVEMENT TO BE REMOVED		
MILL AND INLAY		
UTILITY TRENCH		
EXISTING CONCRETE TO BE REMOVED		
EXISTING GRAVEL TO BE REMOVED		
FENCE TO BE REMOVED		
TREE PROTECTION FENCE		

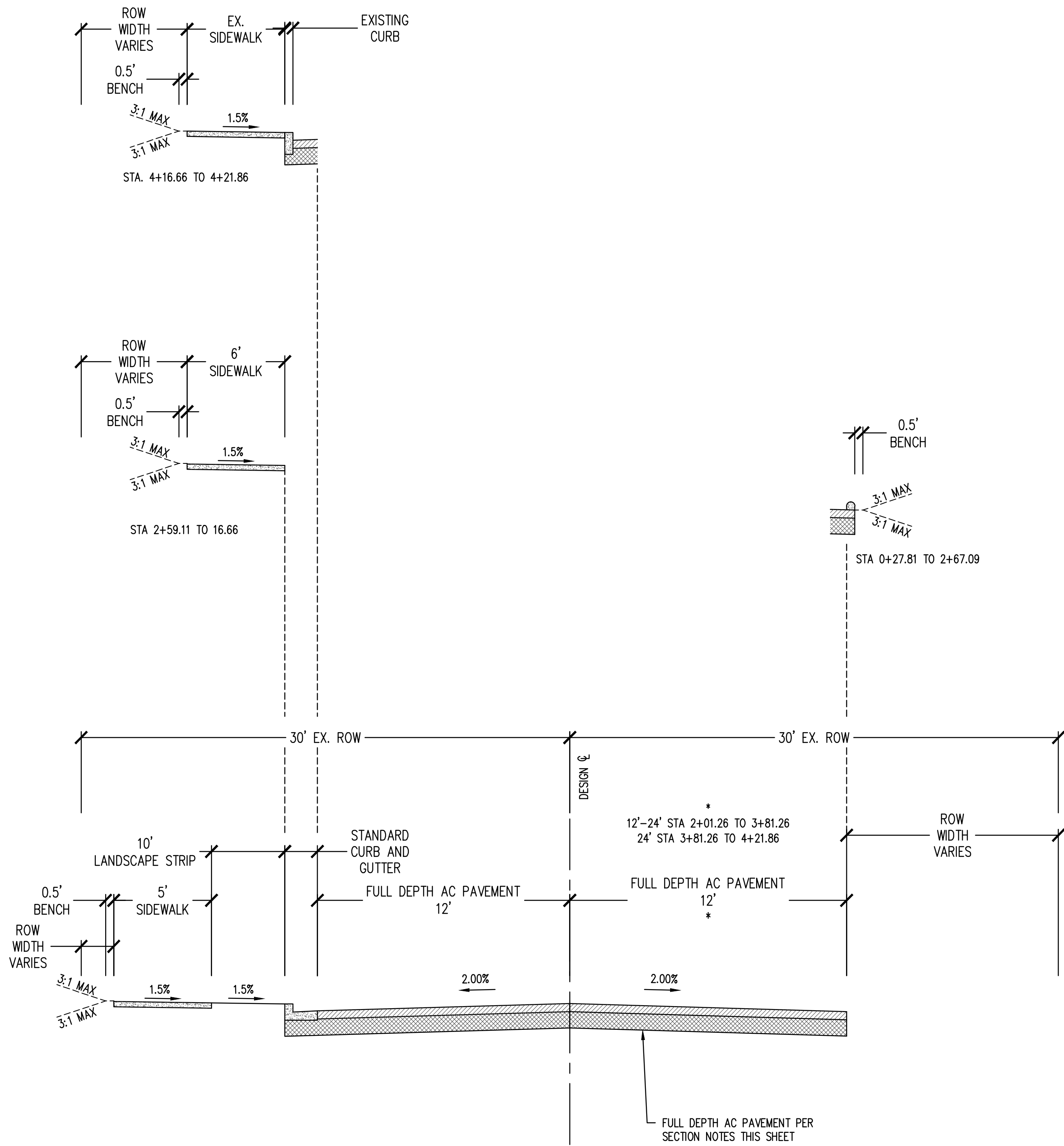


NOTES:

- SEE ROADWAY PLANS FOR EXTENTS OF PAVEMENT IMPROVEMENTS.
- SAWCUT LINE TO BE PLACED ALONG LANE LINE OR MID-LANE LINE UNLESS OTHERWISE SHOWN/NOTED ON PLANS.
- DRIVEWAYS, TURNOUTS, CURB RAMPS, AND INTERSECTIONS NOT REFLECTED IN TYPICAL CROSS SECTIONS.
- CONTRACTOR TO FIELD ADJUST SIDEWALK TO PREVENT TREE ROOT CUTS AND TO PROTECT TREES WITH 5% MAX RUNNING SLOPE.

FULL DEPTH AC PAVEMENT SECTIONS:

- SE WASHINGTON ST./SE MADISON ST./SE 32ND ST./SE 35TH ST./SE 27TH ST.
 - 3" LEVEL II AC PAVEMENT (WEARING COURSE)
 - 2" LEVEL II AC PAVEMENT (BASE COURSE)
 - 8" CRUSHED AGGREGATE ROCK
- SE EDISON ST.
 - 3" LEVEL II AC PAVEMENT (WEARING COURSE)
 - 8" CRUSHED AGGREGATE ROCK

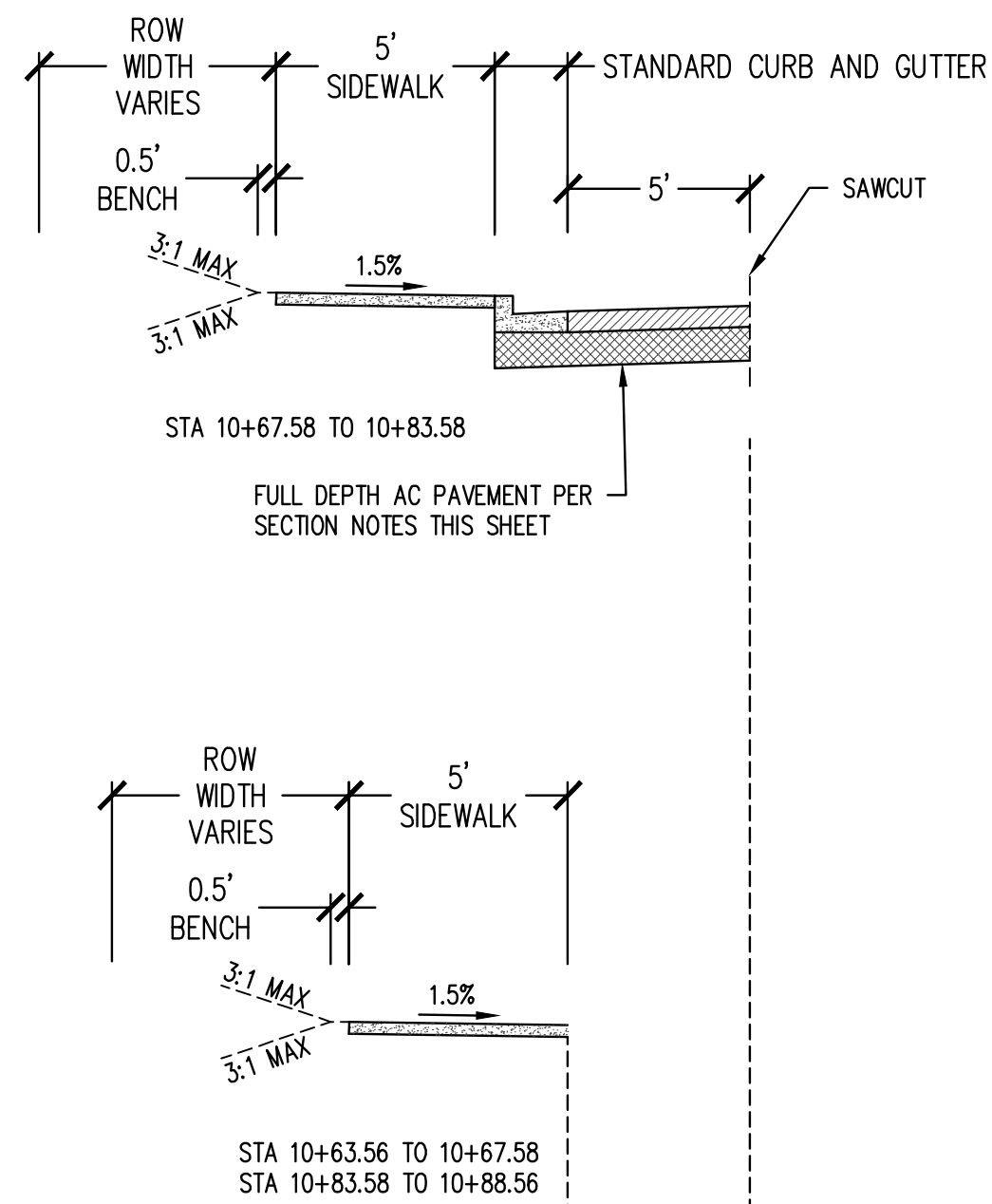


EDISON STREET NOTES:

- ROADWAY CROSS-SLOPES SHOWN VARY. SEE SUPERELEVATION DIAGRAMS AND INTERSECTION GRADING DETAILS FOR ADDITIONAL INFO
- TYPICAL SECTION DOES NOT REFLECT STORMWATER FACILITY. SEE SHEET C112 FOR ADDITIONAL INFORMATION

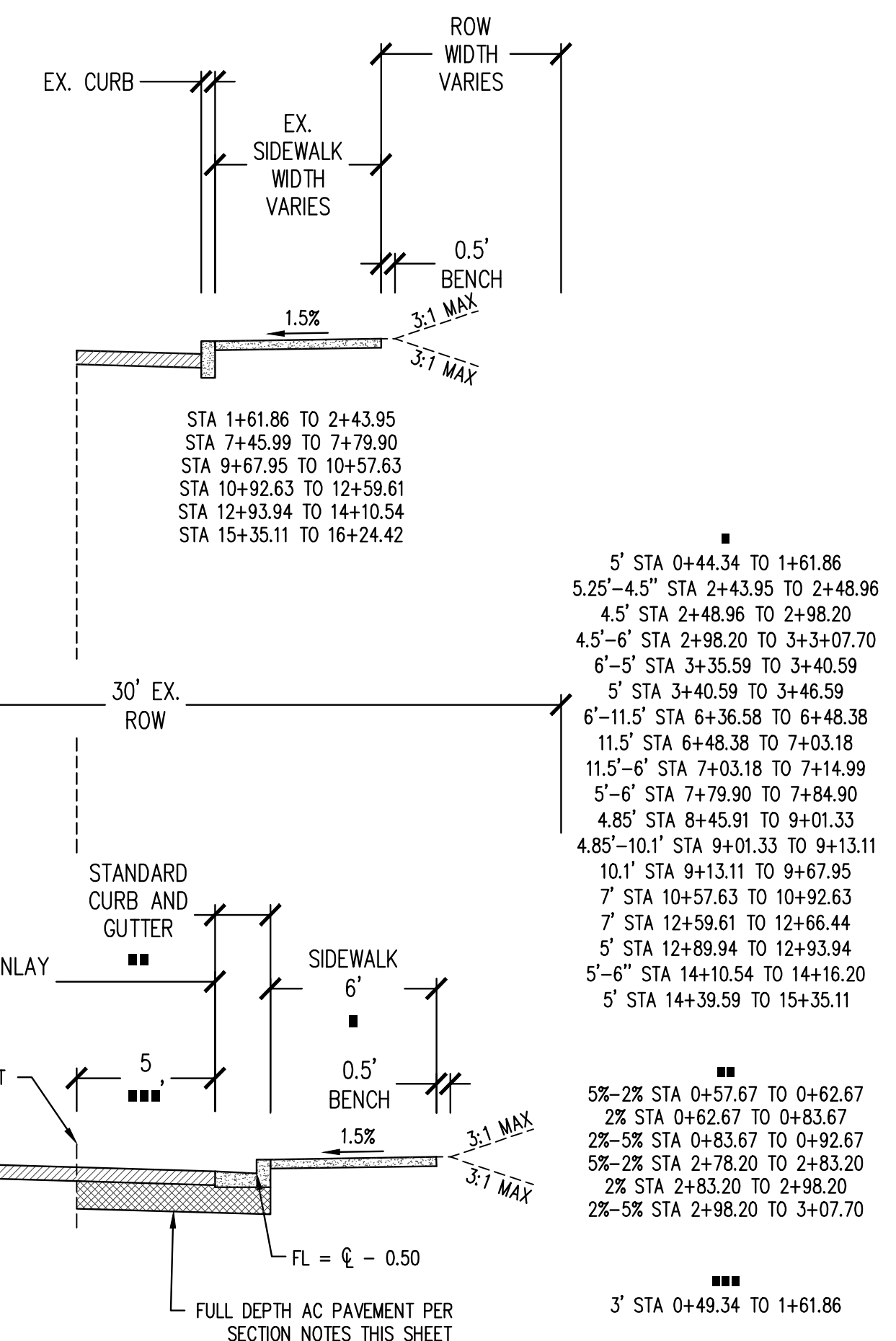
TYPICAL STREET SECTION E-1

E ALIGNMENT STA. 0+27.00 TO 4+16.63
NTS



TYPICAL STREET SECTION 27TH-1

27TH ALIGNMENT STA 0+44.34 TO 16+24.42
NTS



TYPICAL STREET SECTIONS

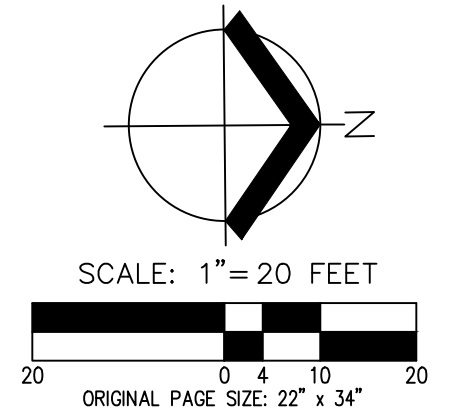
DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC
DATE: 06/07/2024
REGISTERED PROFESSIONAL ENGINEER
76382PE
OREGON
JOHN P. CHRISTIANSEN
RENEWAL DATE: 12/31/25
REVISIONS:

JOB NUMBER
8970
SHEET
C097



AKS DRAWING FILE: 8970 C101 TYP. STR. SECTIONS.DWG | LAYOUT: C097

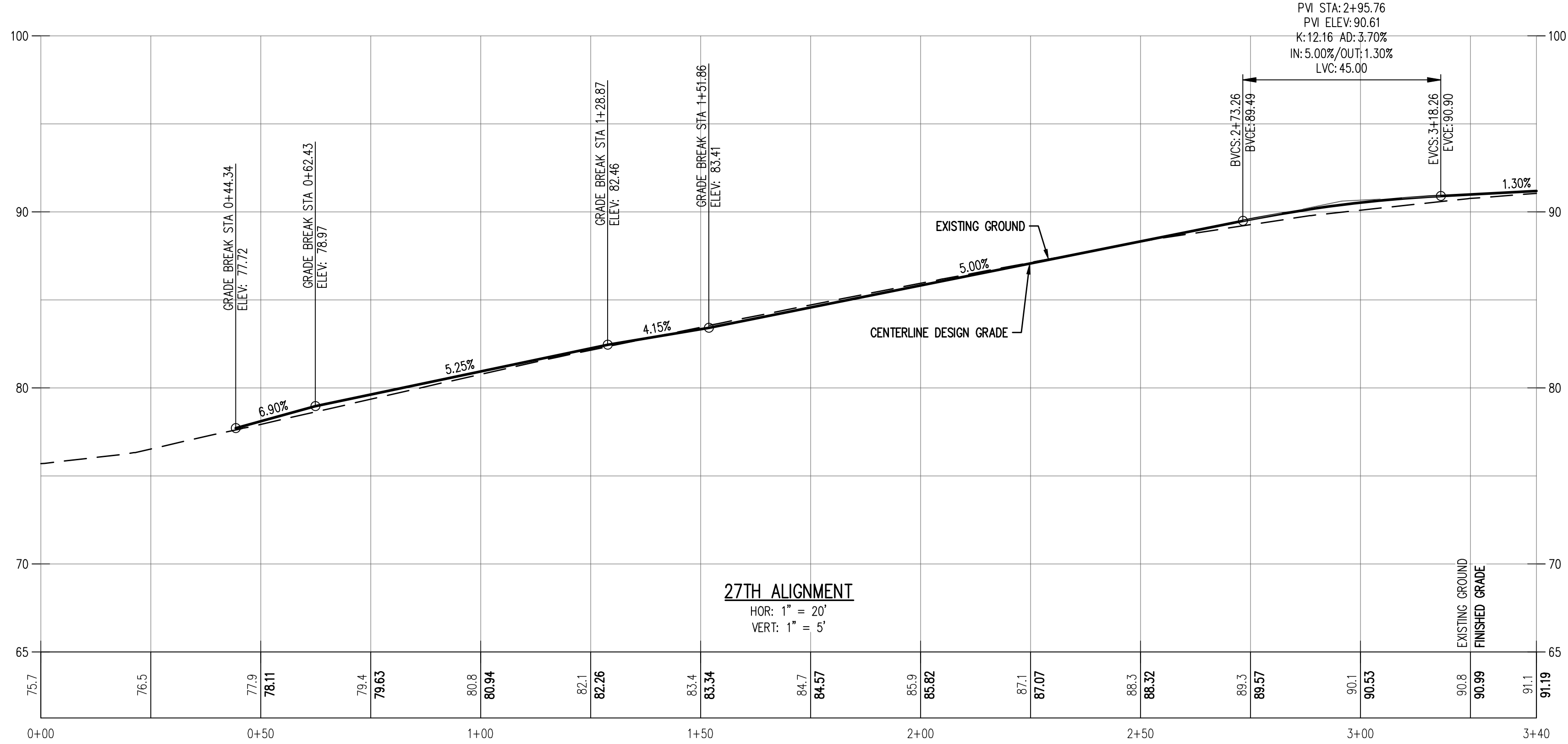
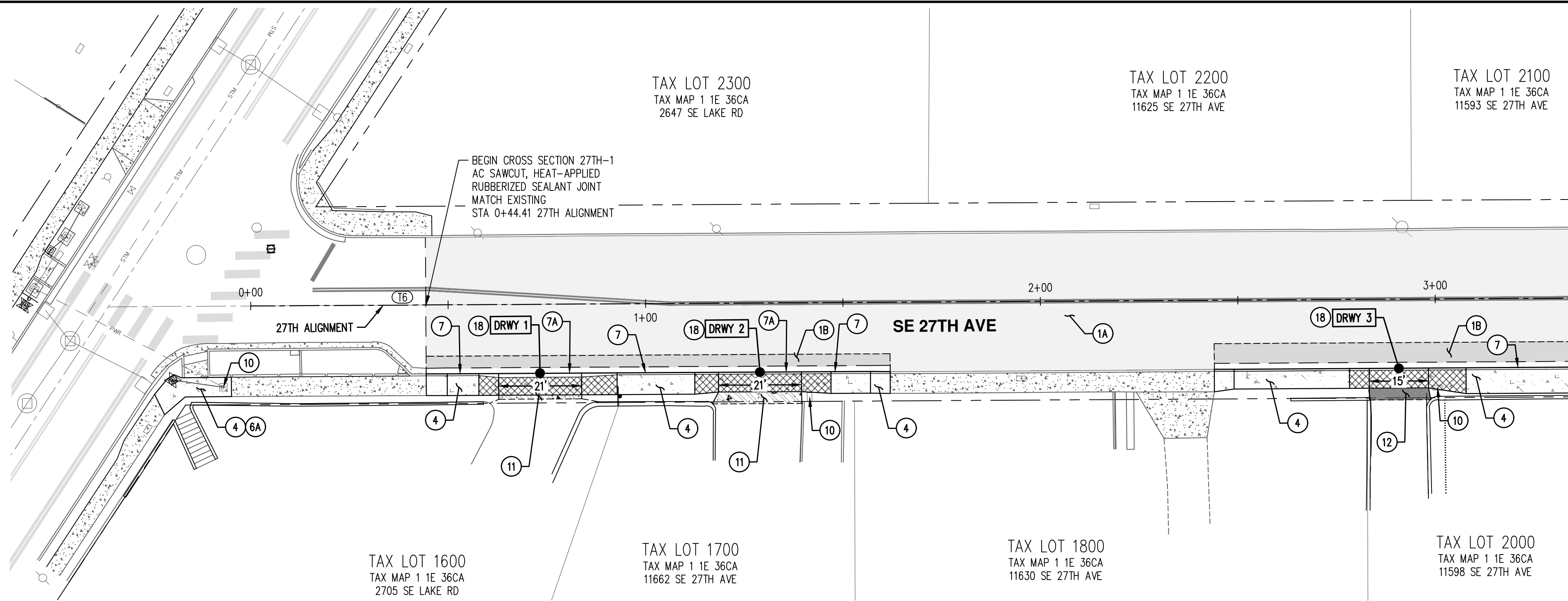
DRIVEWAY TABLE			
DRIVEWAY #	STATION	OFFSET	ALIGNMENT
1	0+73.17	17.46	27TH ALIGNMENT
2	1+28.86	17.50	27TH ALIGNMENT
3	2+90.70	17.50	27TH ALIGNMENT



LEGEND

- NEW CONCRETE WALK
- STORMWATER FACILITY
- FULL DEPTH AC PAVEMENT
- GRIND AND INLAY
- UTILITY TRENCH RESTORATION
- ASPHALT DRIVEWAY
- CONCRETE DRIVEWAY
- CURB RAMP NUMBER
CURB RAMP DETAIL SHEET NUMBER

MATCH LINE - SEE SHEET C114



27TH ALIGNMENT ALIGNMENT TABLE

CURVE/TANGENT	STATION	RADIUS	LENGTH	DELTA	CHORD	TANGENT/CHORD BEARING
T6	0+00.00		1426.69'			N00°09'32"E

STREET KEYED NOTES:

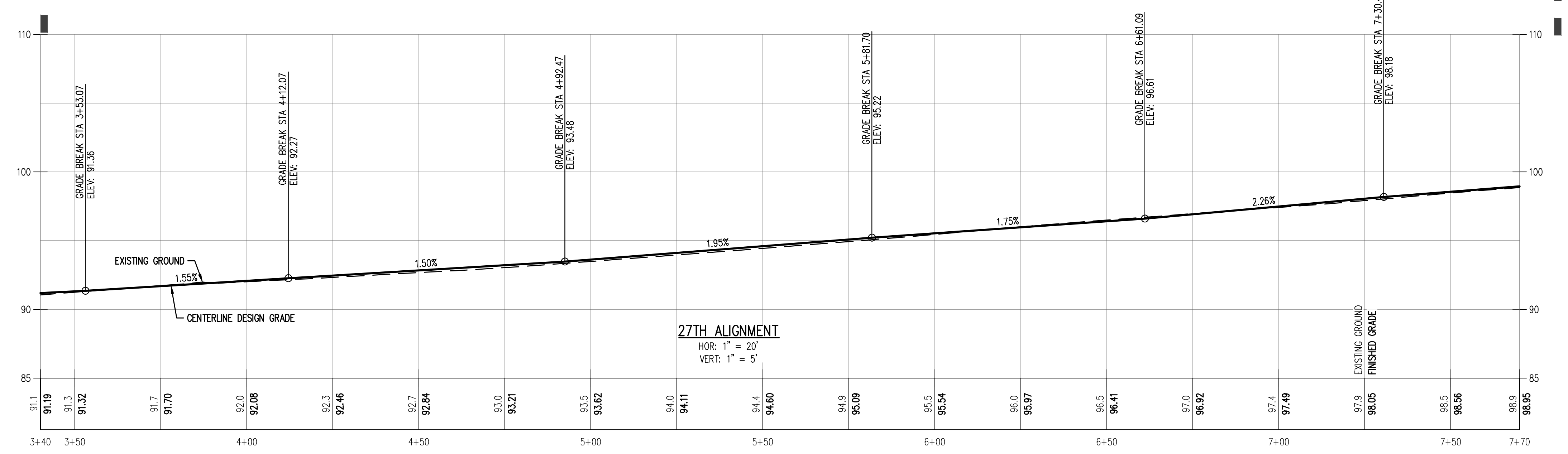
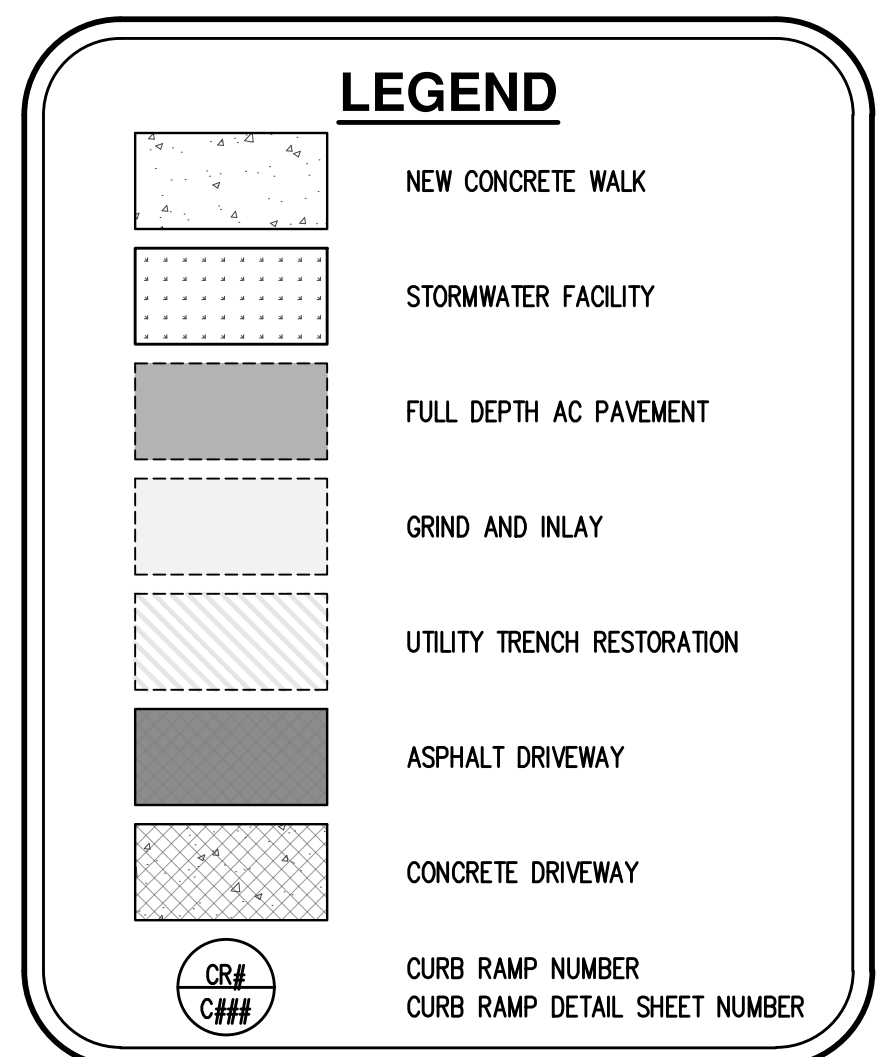
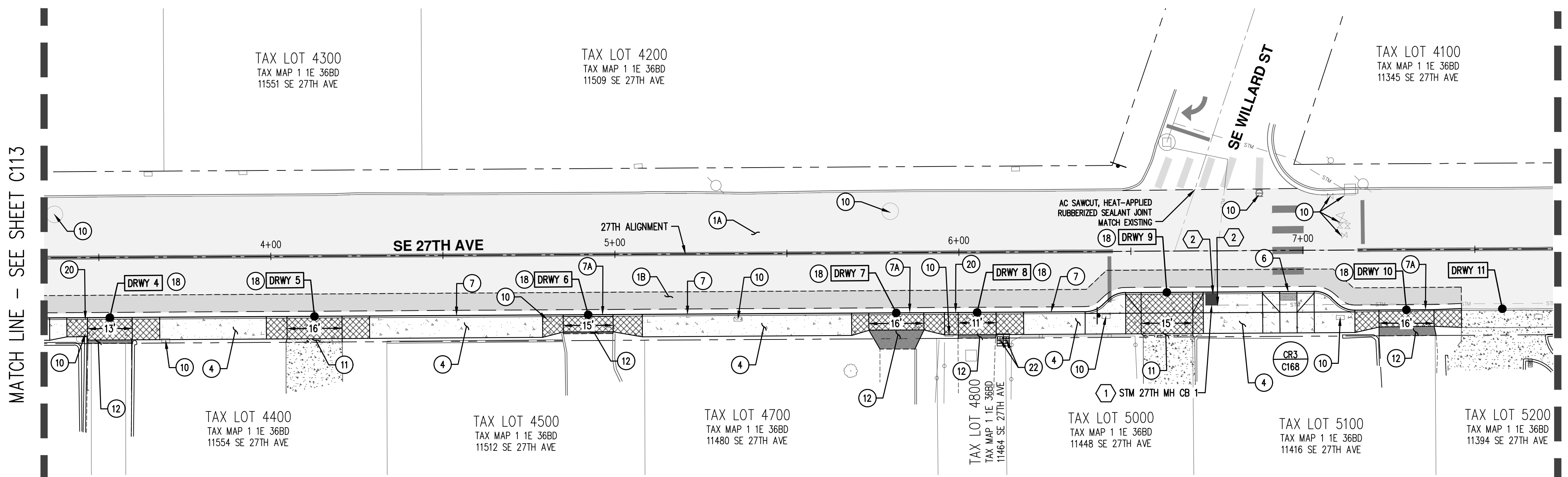
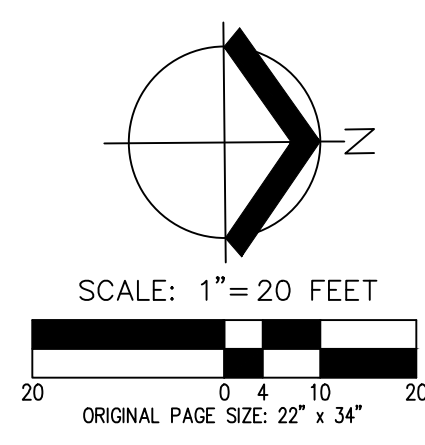
- 1.A. GRIND AND INLAY.
- 1.B. FULL DEPTH AC PAVEMENT.
2. CONNECT TO EXISTING WALK.
3. INSTALL AC PAVEMENT SURFACE RESTORATION FOR UTILITY IMPROVEMENTS, COM 510, SHEET C180.
4. INSTALL SIDEWALK PER OSD DETAIL RD720 AND RD721, SHEET C182.
5. INSTALL DRIVEWAY PER PWS DETAILS 525 AND 526, SHEET C180.
6. INSTALL CURB RAMP WITH DETECTABLE WARNING SURFACE. SEE CURB RAMP DETAILS FOR ADDITIONAL INFORMATION, SHEETS C184-C186.
- 6A. INSTALL SIDEWALK LANDING AND TRANSITION PANELS FOR CURB RAMP AND PUSH BUTTON COMPLIANCE PER PROWAG STANDARDS.
7. INSTALL 24" STANDARD CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7A. INSTALL LOW PROFILE MOUNTABLE CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7B. INSTALL THICKENED CURB AND GUTTER PER CITY OF PORTLAND DRAWING P-540 SHEET C186.
8. INSTALL STANDARD CURB PER OSD DETAIL RD700, SHEET C181.
- 8A. INSTALL ASPHALT CURB PER OSD DETAIL RD701, SHEET C182.
9. INSTALL THICKENED EDGE SIDEWALK WITH FENCE PER DETAIL, SHEET C180 WITH FENCE PER COM DETAIL 514, SHEET C180.
- 9A. INSTALL THICKENED EDGE SIDEWALK PER DETAIL SHEET C180.
10. ADJUST EXISTING STRUCTURE TO FINISHED GRADE.
- 10A. ROTATE MANHOLE CONE 180 DEGREES. ADJUST STRUCTURE TO FINISH GRADE.
11. INSTALL CONCRETE TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
12. INSTALL AC PAVEMENT TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
13. INSTALL 30' BUS PAD.
14. INSTALL CUT THROUGH ISLAND, SEE DETAIL SHEET C160.
15. INSTALL DECORATIVE FENCE PER PWS DETAIL 514, SHEET C180.
16. INSTALL 3-FEET WIDE GATE PER MANUFACTURER RECOMMENDATIONS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION.
- 17A. INSTALL 4' CHAIN LINK FENCE.
- 17B. INSTALL SALVAGED FENCE.
18. INSTALL DRIVEWAY PER DRIVEWAY DETAILS, SHEETS C170 TO C177.
19. CONTRACTOR TO FIELD ADJUST AND RAISE SIDEWALK GRADE AS NECESSARY TO PROTECT EXISTING TREE(S) AND TREE ROOTS. SIDEWALK TO BE 5% MAX RUNNING SLOPE AND 2% MAX CROSS SLOPE AS CONSTRUCTED.
20. REPLACE EXISTING WEEP HOLE PER OSD DETAIL RD700, SHEET C181. CONTRACTOR TO COORDINATE WITH THE CITY FOR LOCATION DETAILS.
21. INSTALL STORM FACILITY (ALTERNATIVE SECTION) PER DETAIL SW-305, SHEET C186. STORMWATER FACILITY PLANTING TO BE 1-GALLON HERBACEOUS PLANTS, EVEN MIX OF SPREADING RUSH (JUNCUS PATENS) AND SLOUGH SEDGE (CAREX OBNUPTA), AT 18" O.C. TRIANGULAR SPACING.
22. INSTALL MULTIPLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOX ON NEW POST. CONTRACTOR TO COORDINATE WITH PRIVATE RESIDENCE.
23. INSTALL SINGLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOXES ON NEW POST. COORDINATE WITH PRIVATE RESIDENCE.
24. INSTALL CONCRETE INLET PER CITY OF PORTLAND DRAWING P-300, SHEET C187.
25. INSTALL 5-FT TALL WESTERN RED CEDAR TREE PER MILWAUKIE STANDARD DRAWING 513. DO NOT INSTALL ROOT BARRIER. COORDINATE WITH CITY AND PROPERTY OWNER FOR LOCATION PRIOR TO INSTALLATION.

GENERAL NOTES:

1. SEE TYPICAL STREET SECTIONS FOR PAVEMENTS DEPTH, SIDEWALK WIDTHS AND ADDITIONAL INFORMATION.
2. SEE SIGNAGE AND STRIPING PLANS FOR SIGNAGE AND STRIPING INSTALLATION DETAILS.
3. SEE CURB RAMP DETAILS FOR CURB RETURN PROFILE, RAMP DIMENSIONS AND GRADING DETAILS.
4. CONTRACTOR TO COORDINATE WITH CITY ON ALL STREET IMPROVEMENTS.
5. ALL SIDEWALK GRADES BETWEEN SECTIONS WITH NEW CURB AND SECTIONS WITH EXISTING CURB SHALL TRANSITION WITH GRADES NOT TO EXCEED 4.5% NOMINAL RUNNING SLOPE (5% AS CONSTRUCTED).
6. ALL NEW CURB AND GUTTER HEIGHT AND SLOPE SHALL MATCH EXISTING GRADES AT MATCH POINTS. TRANSITION CURB HEIGHT TO BE SMOOTH AND OCCUR OVER 2' - 4' IN LENGTH.
7. RESTORE DISTURBED GROUNDS WITH LANDSCAPING PER THE FOLLOWING:
 - EXISTING PLANTED OR MULCHED AREAS TO BE RESTORED WITH MULCH.
 - EXISTING AREAS WITH DECORATIVE ROCK TO BE RESTORED WITH SALVAGED DECORATIVE ROCK. SALVAGE AND STOCKPILE ROCK AS NECESSARY FOR CONSTRUCTION.
 - EXISTING LAWN AREAS TO BE RESTORED WITH LAWN SEED PER THE FOLLOWING SEED MIX:
 - 30% LOLIUM PERENNE 'BLAZER 4' (BLAZER 4 PERENNIAL RYEGRASS)
 - 30% LOLIUM PERENNE 'EXPRESS II' (EXPRESS II PERENNIAL RYEGRASS)
 - 20% FESTUCA RUBRA SPP. FALLAX VAR. WINDWARD (WINDWARD CHEWINGS FESCUE)
 - 20% FESTUCA RUBRA COMMUTATA VAR. GARNETT (GARNETT CREEPING CHEWINGS FESCUE)
8. CONTRACTOR TO PROTECT EXISTING ASPHALT NOT INDICATED FOR REMOVAL FOR TRENCH RESTORATION OR FULL DEPTH PAVEMENT. ANY REMAINING EXISTING ASPHALT PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE SAWCUT, REMOVED, AND RESTORED AS UTILITY TRENCH RESTORATION PRIOR TO MILL AND INLAY.
9. CONTRACTOR TO ENSURE ALL SIDEWALK MAINTAINS A MINIMUM 4' CLEAR WIDTH.

AKS DRAWING FILE: 8970 C101 STR.DWG LAYOUT: C113





CB	TYPE	TOP OF CURB ELEV	IE OUT	SUMP	PIPE	SLOPE	LENGTH	DS MH	STATION & OFFSET	ALIGNMENT
STM 27TH MH CB 1	MODIFIED CURB INLET MANHOLE	96.43	94.07	1.50'	12"	0.0016	42.69 LF		6+73.39 15.80 R	27TH ALIGNMENT

STORM KEYED NOTES:

- REMOVE EXISTING INLET AND INSTALL MODIFIED CURB INLET MANHOLE PER CWS DETAIL 360, SHEET C253.
- CONNECT EXISTING PIPE TO NEW MANHOLE PER ODOT STANDARD DWG NO RD345, SHEET C252.

DRIVEWAY #	STATION	OFFSET	ALIGNMENT
4	3+53.09	17.50	27TH ALIGNMENT
5	4+12.58	17.50	27TH ALIGNMENT
6	4+92.13	17.50	27TH ALIGNMENT
7	5+81.70	17.50	27TH ALIGNMENT
8	6+05.20	17.50	27TH ALIGNMENT
9	6+60.37	12.00	27TH ALIGNMENT
10	7+29.99	17.50	27TH ALIGNMENT
11	7+58.13	17.36	27TH ALIGNMENT

GENERAL NOTES:

- SEE TYPICAL STREET SECTIONS FOR PAVEMENTS DEPTH, SIDEWALK WIDTHS AND ADDITIONAL INFORMATION.
- SEE SIGNAGE AND STRIPING PLANS FOR SIGNAGE AND STRIPING INSTALLATION DETAILS.
- SEE CURB RAMP DETAILS FOR CURB RETURN PROFILE, RAMP DIMENSIONS AND GRADING DETAILS.
- CONTRACTOR TO COORDINATE WITH CITY ON ALL STREET IMPROVEMENTS.
- ALL SIDEWALK GRADES BETWEEN SECTIONS WITH NEW CURB AND SECTIONS WITH EXISTING CURB SHALL TRANSITION WITH GRADES NOT TO EXCEED 4.5% NOMINAL RUNNING SLOPE (5% AS CONSTRUCTED).
- ALL NEW CURB AND GUTTER HEIGHT AND SLOPE SHALL MATCH EXISTING GRADES AT MATCH POINTS. TRANSITION CURB HEIGHT TO BE SMOOTH AND OCCUR OVER 2' - 4' IN LENGTH.
- RESTORE DISTURBED GROUNDS WITH LANDSCAPING PER THE FOLLOWING:
 - EXISTING PLANTED OR MULCHED AREAS TO BE RESTORED WITH MULCH.
 - EXISTING AREAS WITH DECORATIVE ROCK TO BE RESTORED WITH SALVAGED DECORATIVE ROCK. SALVAGE AND STOCKPILE ROCK AS NECESSARY FOR CONSTRUCTION.
 - EXISTING LAWN AREAS TO BE RESTORED WITH LAWN SEED PER THE FOLLOWING SEED MIX:
 - 30% LOLIUM PERENNE 'BLAZER 4' (BLAZER 4 PERENNIAL RYEGRASS)
 - 30% LOLIUM PERENNE 'EXPRESS II' (EXPRESS II PERENNIAL RYEGRASS)
 - 20% FESTUCA RUBRA SPP. FALLAX VAR. 'WINDWARD' (WINDWARD CHEWINGS FESCUE)
 - 20% FESTUCA RUBRA COMMUTATA VAR. GARNETT (GARNETT CREEPING CHEWINGS FESCUE)
- CONTRACTOR TO PROTECT EXISTING ASPHALT NOT INDICATED FOR REMOVAL FOR TRENCH RESTORATION OR FULL DEPTH PAVEMENT. ANY REMAINING EXISTING ASPHALT PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE SAWCUT, REMOVED, AND RESTORED AS UTILITY TRENCH RESTORATION PRIOR TO MILL AND INLAY.
- CONTRACTOR TO ENSURE ALL SIDEWALK MAINTAINS A MINIMUM 4' CLEAR WIDTH.

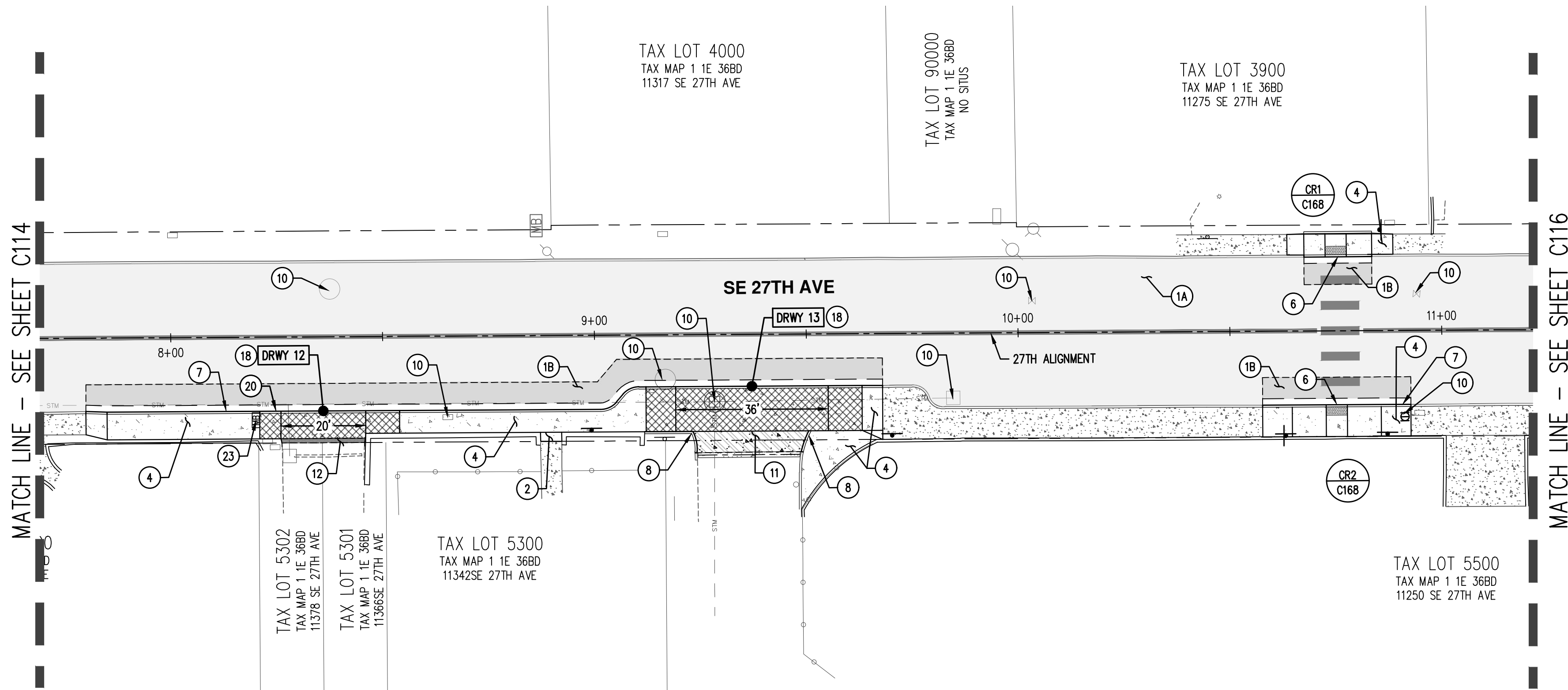
STREET KEYED NOTES:

- A. GRIND AND INLAY.
- B. FULL DEPTH AC PAVEMENT.
- CONNECT TO EXISTING WALK.
- INSTALL AC PAVEMENT SURFACE RESTORATION FOR UTILITY IMPROVEMENTS, COM 510, SHEET C180.
- INSTALL SIDEWALK PER OSD DETAIL RD720 AND RD721, SHEET C182.
- INSTALL DRIVEWAY PER PWS DETAILS 525 AND 526, SHEET C180.
- INSTALL CURB RAMP WITH DETECTABLE WARNING SURFACE. SEE CURB RAMP DETAILS FOR ADDITIONAL INFORMATION, SHEETS C184-C186.
- INSTALL SIDEWALK LANDING AND TRANSITION PANELS FOR CURB RAMP AND PUSH BUTTON COMPLIANCE PER PROWAG STANDARDS.
- INSTALL 24" STANDARD CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- INSTALL LOW PROFILE MOUNTABLE CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- INSTALL THICKENED CURB AND GUTTER PER CITY OF PORTLAND DRAWING P-540 SHEET C186.
- INSTALL STANDARD CURB PER OSD DETAIL RD700, SHEET C181.
- INSTALL ASPHALT CURB PER OSD DETAIL RD701, SHEET C182.
- INSTALL THICKENED EDGE SIDEWALK WITH FENCE PER DETAIL, SHEET C180 WITH FENCE PER COM DETAIL 514, SHEET C180.
- INSTALL THICKENED EDGE SIDEWALK PER DETAIL SHEET C180.
- ADJUST EXISTING STRUCTURE TO FINISHED GRADE.
- REPLACE EXISTING WEEP HOLE PER OSD DETAIL RD700, SHEET C181. CONTRACTOR TO COORDINATE WITH THE CITY FOR LOCATION DETAILS.
- INSTALL STORM FACILITY (ALTERNATIVE SECTION) PER DETAIL SW-305, SHEET C186. STORMWATER FACILITY PLANTING TO BE 1-GALLON HERBACEOUS PLANTS, EVEN MIX OF SPREADING RUSH (JUNCUS PATENS) AND SLOUGH SEDGE (CAREX OBNUPTA), AT 18" O.C. TRIANGULAR SPACING.
- INSTALL MULTIPLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOX ON NEW POST. CONTRACTOR TO COORDINATE WITH PRIVATE RESIDENCE.
- INSTALL SINGLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOXES ON NEW POST. COORDINATE WITH PRIVATE RESIDENCE.
- INSTALL CONCRETE INLET PER CITY OF PORTLAND DRAWING P-300, SHEET C187.
- INSTALL 5-FT TALL WESTERN RED CEDAR TREE PER MILWAUKIE STANDARD DRAWING 513. DO NOT INSTALL ROOT BARRIER. COORDINATE WITH CITY AND PROPERTY OWNER FOR LOCATION PRIOR TO INSTALLATION.

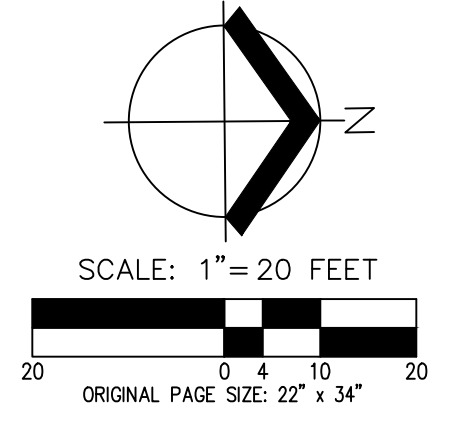
AKS DRAWING FILE: 8970 C101 STR.DWG LAYOUT: C114



AKS DRAWING FILE: 8070 C101 STR.DWG LAYOUT: C115

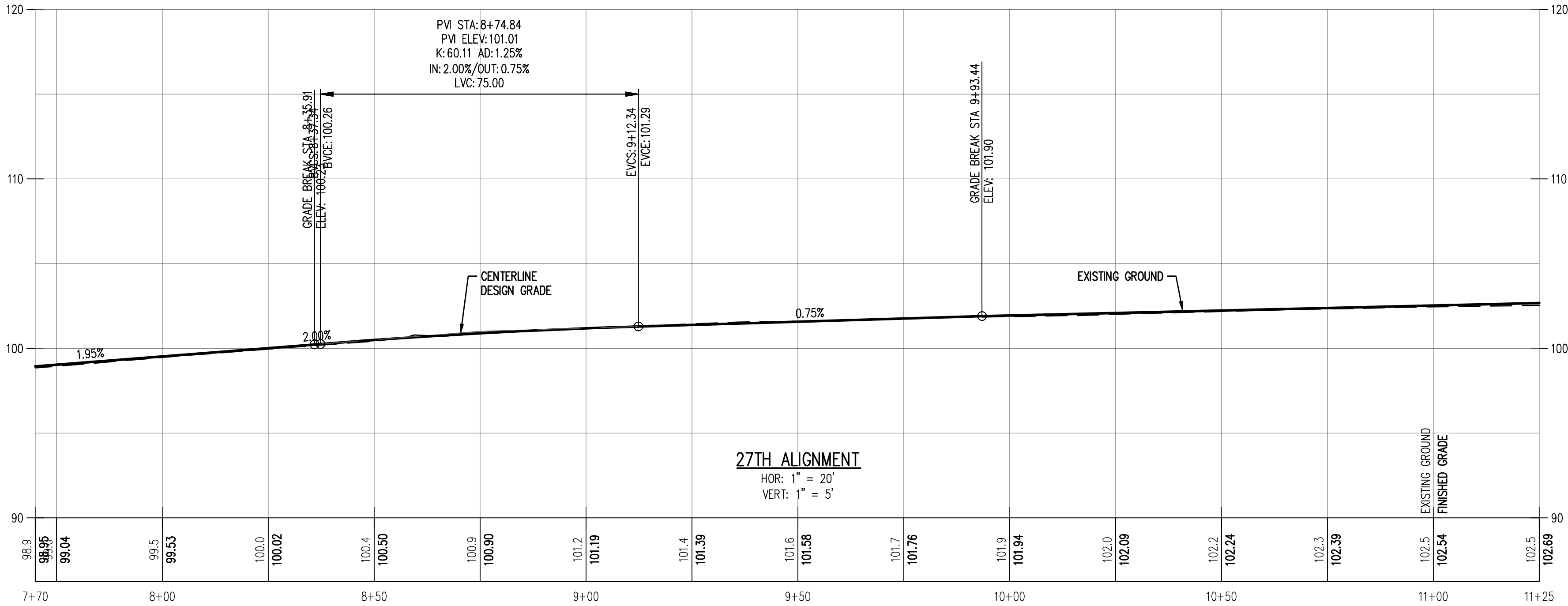


DRIVEWAY TABLE			
DRIVEWAY #	STATION	OFFSET	ALIGNMENT
12	8+35.91	17.50	27TH ALIGNMENT
13	9+37.11	12.25	27TH ALIGNMENT



LEGEND

	NEW CONCRETE WALK
	STORMWATER FACILITY
	FULL DEPTH AC PAVEMENT
	GRIND AND INLAY
	UTILITY TRENCH RESTORATION
	ASPHALT DRIVEWAY
	CONCRETE DRIVEWAY
	CURB RAMP NUMBER CURB RAMP DETAIL SHEET NUMBER



GENERAL NOTES:

1. SEE TYPICAL STREET SECTIONS FOR PAVEMENTS DEPTH, SIDEWALK WIDTHS AND ADDITIONAL INFORMATION.
2. SEE SIGNAGE AND STRIPING PLANS FOR SIGNAGE AND STRIPING INSTALLATION DETAILS.
3. SEE CURB RAMP DETAILS FOR CURB RETURN PROFILE, RAMP DIMENSIONS AND GRADING DETAILS.
4. CONTRACTOR TO COORDINATE WITH CITY ON ALL STREET IMPROVEMENTS.
5. ALL SIDEWALK GRADES BETWEEN SECTIONS WITH NEW CURB AND SECTIONS WITH EXISTING CURB SHALL TRANSITION WITH GRADES NOT TO EXCEED 4.5% NOMINAL RUNNING SLOPE (5% AS CONSTRUCTED).
6. ALL NEW CURB AND GUTTER HEIGHT AND SLOPE SHALL MATCH EXISTING GRADES AT MATCH POINTS. TRANSITION CURB HEIGHT TO BE SMOOTH AND OCCUR OVER 2' - 4' IN LENGTH.
7. RESTORE DISTURBED GROUNDS WITH LANDSCAPING PER THE FOLLOWING:
 - EXISTING PLANTED OR MULCHED AREAS TO BE RESTORED WITH MULCH.
 - EXISTING AREAS WITH DECORATIVE ROCK TO BE RESTORED WITH SALVAGED DECORATIVE ROCK. SALVAGE AND STOCKPILE ROCK AS NECESSARY FOR CONSTRUCTION.
 - EXISTING LAWN AREAS TO BE RESTORED WITH LAWN SEED PER THE FOLLOWING SEED MIX:
 - 30% LOLIUM PERENNE 'BLAZER 4' (BLAZER 4 PERENNIAL RYEGRASS)
 - 30% LOLIUM PERENNE 'EXPRESS II' (EXPRESS II PERENNIAL RYEGRASS)
 - 20% FESTUCA RUBRA SPP. FALLAX VAR. WINDWARD (WINDWARD CHEWINGS FESCUE)
 - 20% FESTUCA RUBRA COMMUTATA VAR. GARNETT (GARNETT CREEPING CHEWINGS FESCUE)
8. CONTRACTOR TO PROTECT EXISTING ASPHALT NOT INDICATED FOR REMOVAL FOR TRENCH RESTORATION OR FULL DEPTH PAVEMENT. ANY REMAINING EXISTING ASPHALT PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE SAWCUT, REMOVED, AND RESTORED AS UTILITY TRENCH RESTORATION PRIOR TO MILL AND INLAY.
9. CONTRACTOR TO ENSURE ALL SIDEWALK MAINTAINS A MINIMUM 4' CLEAR WIDTH.

STREET KEYED NOTES:

- 1.A. GRIND AND INLAY.
- 1.B. FULL DEPTH AC PAVEMENT.
2. CONNECT TO EXISTING WALK.
3. INSTALL AC PAVEMENT SURFACE RESTORATION FOR UTILITY IMPROVEMENTS, COM 510, SHEET C180.
4. INSTALL SIDEWALK PER OSD DETAIL RD720 AND RD721, SHEET C182.
5. INSTALL DRIVEWAY PER PWS DETAILS 525 AND 526, SHEET C180.
6. INSTALL CURB RAMP WITH DETECTABLE WARNING SURFACE. SEE CURB RAMP DETAILS FOR ADDITIONAL INFORMATION, SHEETS C184-C186.
- 6A. INSTALL SIDEWALK LANDING AND TRANSITION PANELS FOR CURB RAMP AND PUSH BUTTON COMPLIANCE PER PROWAG STANDARDS.
7. INSTALL 24" STANDARD CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7A. INSTALL LOW PROFILE MOUNTABLE CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7B. INSTALL THICKENED CURB AND GUTTER PER CITY OF PORTLAND DRAWING P-540 SHEET C186.
8. INSTALL STANDARD CURB PER OSD DETAIL RD700, SHEET C181.
- 8A. INSTALL ASPHALT CURB PER OSD DETAIL RD701, SHEET C182.
9. INSTALL THICKENED EDGE SIDEWALK WITH FENCE PER DETAIL, SHEET C180 WITH FENCE PER COM DETAIL 514, SHEET C180.
- 9A. INSTALL THICKENED EDGE SIDEWALK PER DETAIL SHEET C180.
10. ADJUST EXISTING STRUCTURE TO FINISHED GRADE.
- 10A. ROTATE MANHOLE CONE 180 DEGREES. ADJUST STRUCTURE TO FINISH GRADE.
11. INSTALL CONCRETE TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
12. INSTALL AC PAVEMENT TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
13. INSTALL 30' BUS PAD.
14. INSTALL CUT THROUGH ISLAND, SEE DETAIL SHEET C160.
15. INSTALL DECORATIVE FENCE PER PWS DETAIL 514, SHEET C180.
16. INSTALL 3-FIT WIDE GATE PER MANUFACTURER RECOMMENDATIONS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION.
- 17A. INSTALL 4' CHAIN LINK FENCE.
- 17B. INSTALL SALVAGED FENCE.
18. INSTALL DRIVEWAY PER DRIVEWAY DETAILS, SHEETS C170 TO C177.
19. CONTRACTOR TO FIELD ADJUST AND RAISE SIDEWALK GRADE AS NECESSARY TO PROTECT EXISTING TREE(S) AND TREE ROOTS. SIDEWALK TO BE 5% MAX RUNNING SLOPE AND 2% MAX CROSS SLOPE AS CONSTRUCTED.
20. REPLACE EXISTING WEEP HOLE PER OSD DETAIL RD700, SHEET C181. CONTRACTOR TO COORDINATE WITH THE CITY FOR LOCATION DETAILS.
21. INSTALL STORM FACILITY (ALTERNATIVE SECTION) PER DETAIL SW-305, SHEET C186. STORMWATER FACILITY PLANTING TO BE 1-GALLON HERBACEOUS PLANTS, EVEN MIX OF SPREADING RUSH (JUNCUS PATENS) AND SLOUGH SEDGE (CAREX OBNUPTA), AT 18" O.C. TRIANGULAR SPACING.
22. INSTALL MULTIPLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOX ON NEW POST. CONTRACTOR TO COORDINATE WITH PRIVATE RESIDENCE.
23. INSTALL SINGLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOXES ON NEW POST. COORDINATE WITH PRIVATE RESIDENCE.
24. INSTALL CONCRETE INLET PER CITY OF PORTLAND DRAWING P-300, SHEET C187.
25. INSTALL 5-FIT TALL WESTERN RED CEDAR TREE PER MILWAUKIE STANDARD DRAWING 513. DO NOT INSTALL ROOT BARRIER. COORDINATE WITH CITY AND PROPERTY OWNER FOR LOCATION PRIOR TO INSTALLATION.

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12065 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM
 ENGINEERING - SURVEYING - NATURAL RESOURCES
 FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
 AREA IMPROVEMENTS**
 OREGON
 MILWAUKIE
 CLATSOP COUNTY

**27TH AVE STREET
 PLAN AND PROFILE**

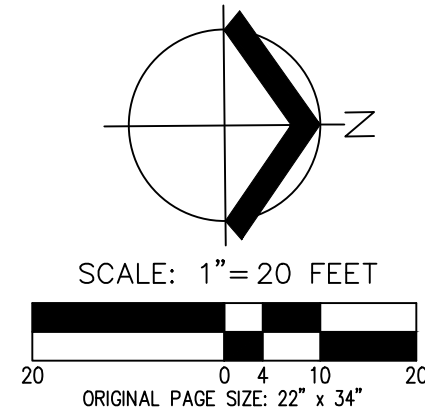
DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC

DATE: 06/07/2024

RENEWAL DATE: 12/31/25
 REVISIONS:

JOB NUMBER
8970
 SHEET
C115





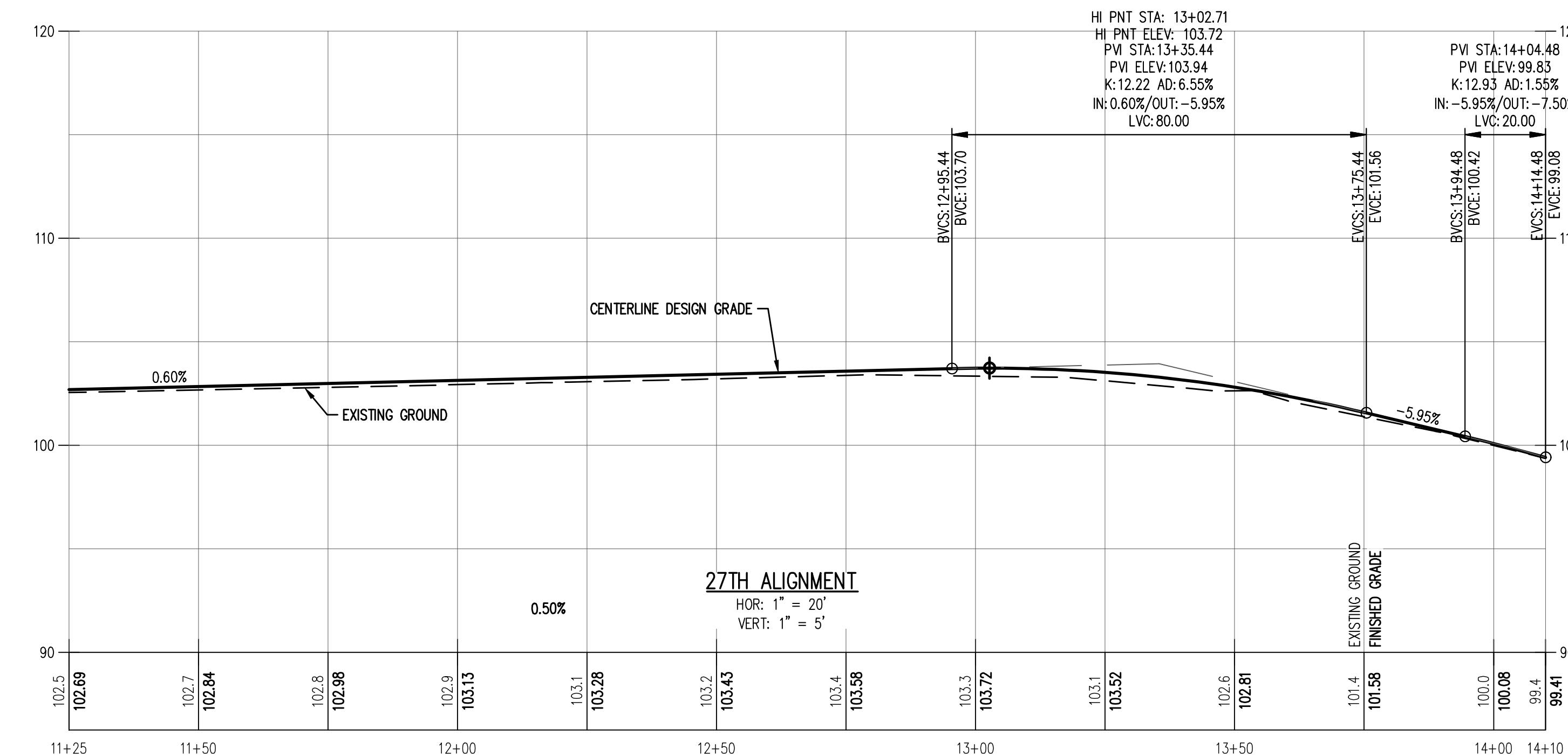
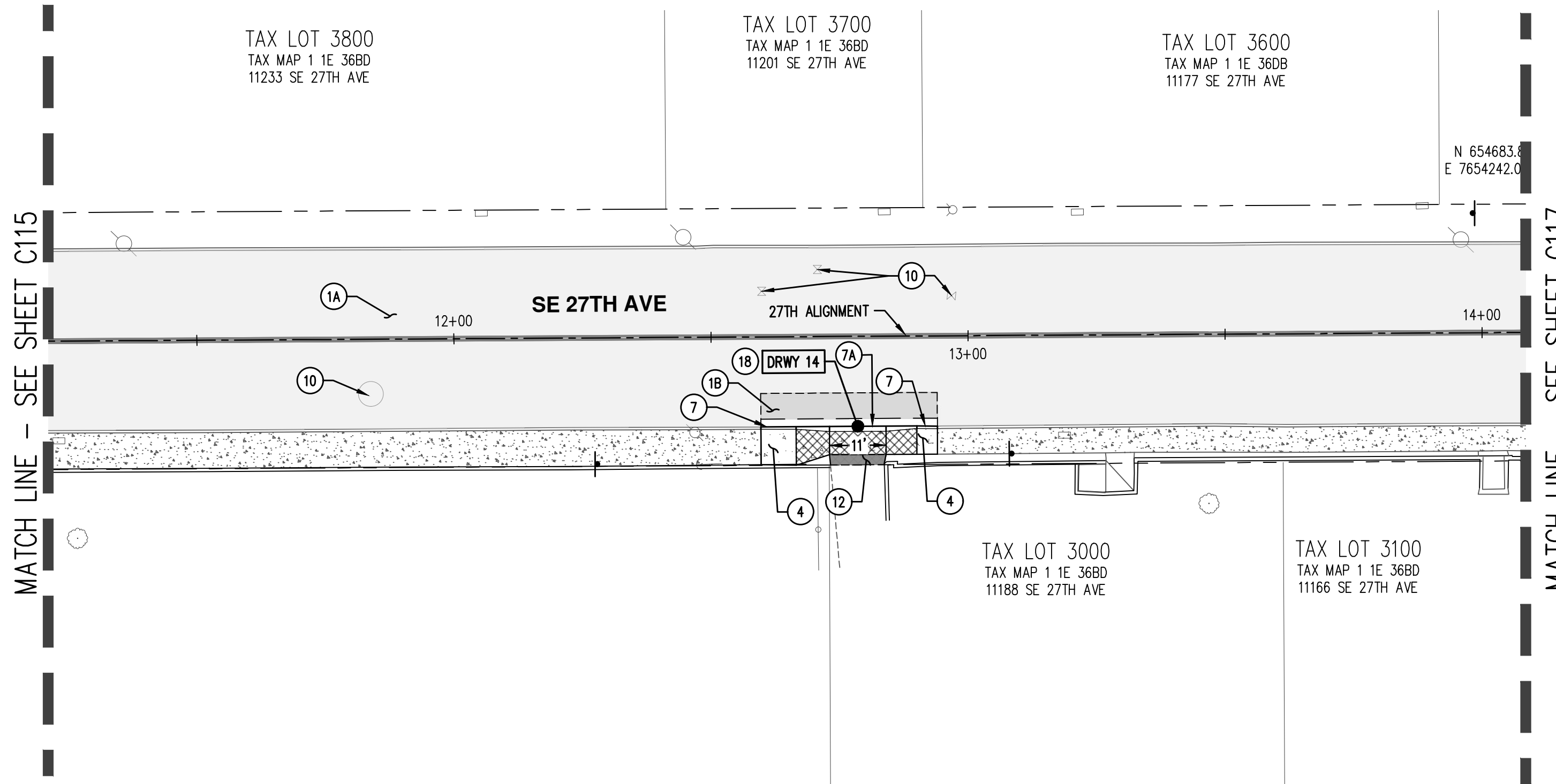
DRIVEWAY TABLE			
DRIVEWAY #	STATION	OFFSET	ALIGNMENT
14	12+78.46	17.50	27TH ALIGNMENT

LEGEND

- NEW CONCRETE WALK
- STORMWATER FACILITY
- FULL DEPTH AC PAVEMENT
- GRIND AND INLAY
- UTILITY TRENCH RESTORATION
- ASPHALT DRIVEWAY
- CONCRETE DRIVEWAY
- CURB RAMP NUMBER
CURB RAMP DETAIL SHEET NUMBER

STREET KEYED NOTES:

- 1.A. GRIND AND INLAY.
- 1.B. FULL DEPTH AC PAVEMENT.
2. CONNECT TO EXISTING WALK.
3. INSTALL AC PAVEMENT SURFACE RESTORATION FOR UTILITY IMPROVEMENTS, COM 510, SHEET C180.
4. INSTALL SIDEWALK PER OSD DETAIL RD720 AND RD721, SHEET C182.
5. INSTALL DRIVEWAY PER PWS DETAILS 525 AND 526, SHEET C180.
6. INSTALL CURB RAMP WITH DETECTABLE WARNING SURFACE. SEE CURB RAMP DETAILS FOR ADDITIONAL INFORMATION, SHEETS C184-C186.
- 6A. INSTALL SIDEWALK LANDING AND TRANSITION PANELS FOR CURB RAMP AND PUSH BUTTON COMPLIANCE PER PROWAG STANDARDS.
7. INSTALL 24" STANDARD CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7A. INSTALL LOW PROFILE MOUNTABLE CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7B. INSTALL THICKENED CURB AND GUTTER PER CITY OF PORTLAND DRAWING P-540 SHEET C186.
8. INSTALL STANDARD CURB PER OSD DETAIL RD700, SHEET C181.
- 8A. INSTALL ASPHALT CURB PER OSD DETAIL RD701, SHEET C182.
9. INSTALL THICKENED EDGE SIDEWALK WITH FENCE PER DETAIL, SHEET C180 WITH FENCE PER COM DETAIL 514, SHEET C180.
- 9A. INSTALL THICKENED EDGE SIDEWALK PER DETAIL SHEET C180.
10. ADJUST EXISTING STRUCTURE TO FINISHED GRADE.
- 10A. ROTATE MANHOLE CONE 180 DEGREES. ADJUST STRUCTURE TO FINISH GRADE.
11. INSTALL CONCRETE TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
12. INSTALL AC PAVEMENT TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
13. INSTALL 30' BUS PAD.
14. INSTALL CUT THROUGH ISLAND, SEE DETAIL SHEET C160.
15. INSTALL DECORATIVE FENCE PER PWS DETAIL 514, SHEET C180.
16. INSTALL 3-FIT WIDE GATE PER MANUFACTURER RECOMMENDATIONS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION.
- 17A. INSTALL 4' CHAIN LINK FENCE.
- 17B. INSTALL SALVAGED FENCE.
18. INSTALL DRIVEWAY PER DRIVEWAY DETAILS, SHEETS C170 TO C177.
19. CONTRACTOR TO FIELD ADJUST AND RAISE SIDEWALK GRADE AS NECESSARY TO PROTECT EXISTING TREE(S) AND TREE ROOTS. SIDEWALK TO BE 5% MAX RUNNING SLOPE AND 2% MAX CROSS SLOPE AS CONSTRUCTED.
20. REPLACE EXISTING WEEP HOLE PER OSD DETAIL RD700, SHEET C181. CONTRACTOR TO COORDINATE WITH THE CITY FOR LOCATION DETAILS.
21. INSTALL STORM FACILITY (ALTERNATIVE SECTION) PER DETAIL SW-305, SHEET C186. STORMWATER FACILITY PLANTING TO BE 1-GALLON HERBACEOUS PLANTS, EVEN MIX OF SPREADING RUSH (JUNCUS PATENS) AND SLOUGH SEDGE (CAREX OBNUPTA), AT 18" O.C. TRIANGULAR SPACING.
22. INSTALL MULTIPLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOX ON NEW POST. CONTRACTOR TO COORDINATE WITH PRIVATE RESIDENCE.
23. INSTALL SINGLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOXES ON NEW POST. COORDINATE WITH PRIVATE RESIDENCE.
24. INSTALL CONCRETE INLET PER CITY OF PORTLAND DRAWING P-300, SHEET C187.
25. INSTALL 5-FIT TALL WESTERN RED CEDAR TREE PER MILWAUKIE STANDARD DRAWING 513. DO NOT INSTALL ROOT BARRIER. COORDINATE WITH CITY AND PROPERTY OWNER FOR LOCATION PRIOR TO INSTALLATION.



GENERAL NOTES:

1. SEE TYPICAL STREET SECTIONS FOR PAVEMENTS DEPTH, SIDEWALK WIDTHS AND ADDITIONAL INFORMATION.
2. SEE SIGNAGE AND STRIPING PLANS FOR SIGNAGE AND STRIPING INSTALLATION DETAILS.
3. SEE CURB RAMP DETAILS FOR CURB RETURN PROFILE, RAMP DIMENSIONS AND GRADING DETAILS.
4. CONTRACTOR TO COORDINATE WITH CITY ON ALL STREET IMPROVEMENTS.
5. ALL SIDEWALK GRADES BETWEEN SECTIONS WITH NEW CURB AND SECTIONS WITH EXISTING CURB SHALL TRANSITION WITH GRADES NOT TO EXCEED 4.5% NOMINAL RUNNING SLOPE (5% AS CONSTRUCTED).
6. ALL NEW CURB AND GUTTER HEIGHT AND SLOPE SHALL MATCH EXISTING GRADES AT MATCH POINTS. TRANSITION CURB HEIGHT TO BE SMOOTH AND OCCUR OVER 2' - 4' IN LENGTH.
7. RESTORE DISTURBED GROUNDS WITH LANDSCAPING PER THE FOLLOWING:
 - EXISTING PLANTED OR MULCHED AREAS TO BE RESTORED WITH MULCH.
 - EXISTING AREAS WITH DECORATIVE ROCK TO BE RESTORED WITH SALVAGED DECORATIVE ROCK. SALVAGE AND STOCKPILE ROCK AS NECESSARY FOR CONSTRUCTION.
 - EXISTING LAWN AREAS TO BE RESTORED WITH LAWN SEED PER THE FOLLOWING SEED MIX:
 - 30% LOLIUM PERENNE 'BLAZER 4' (BLAZER 4 PERENNIAL RYEGRASS)
 - 30% LOLIUM PERENNE 'EXPRESS II' (EXPRESS II PERENNIAL RYEGRASS)
 - 20% FESTUCA RUBRA SPP. FALLAX VAR. WINDWARD (WINDWARD CHEWINGS FESCUE)
 - 20% FESTUCA RUBRA COMMUTATA VAR. GARNETT (GARNETT CREEPING CHEWINGS FESCUE)
8. CONTRACTOR TO PROTECT EXISTING ASPHALT NOT INDICATED FOR REMOVAL FOR TRENCH RESTORATION OR FULL DEPTH PAVEMENT. ANY REMAINING EXISTING ASPHALT PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE SAWCUT, REMOVED, AND RESTORED AS UTILITY TRENCH RESTORATION PRIOR TO MILL AND INLAY.
9. CONTRACTOR TO ENSURE ALL SIDEWALK MAINTAINS A MINIMUM 4' CLEAR WIDTH.

**WASHINGTON STREET
AREA IMPROVEMENTS
MILWAUKIE
OREGON**

**27TH AVE STREET
PLAN AND PROFILE**

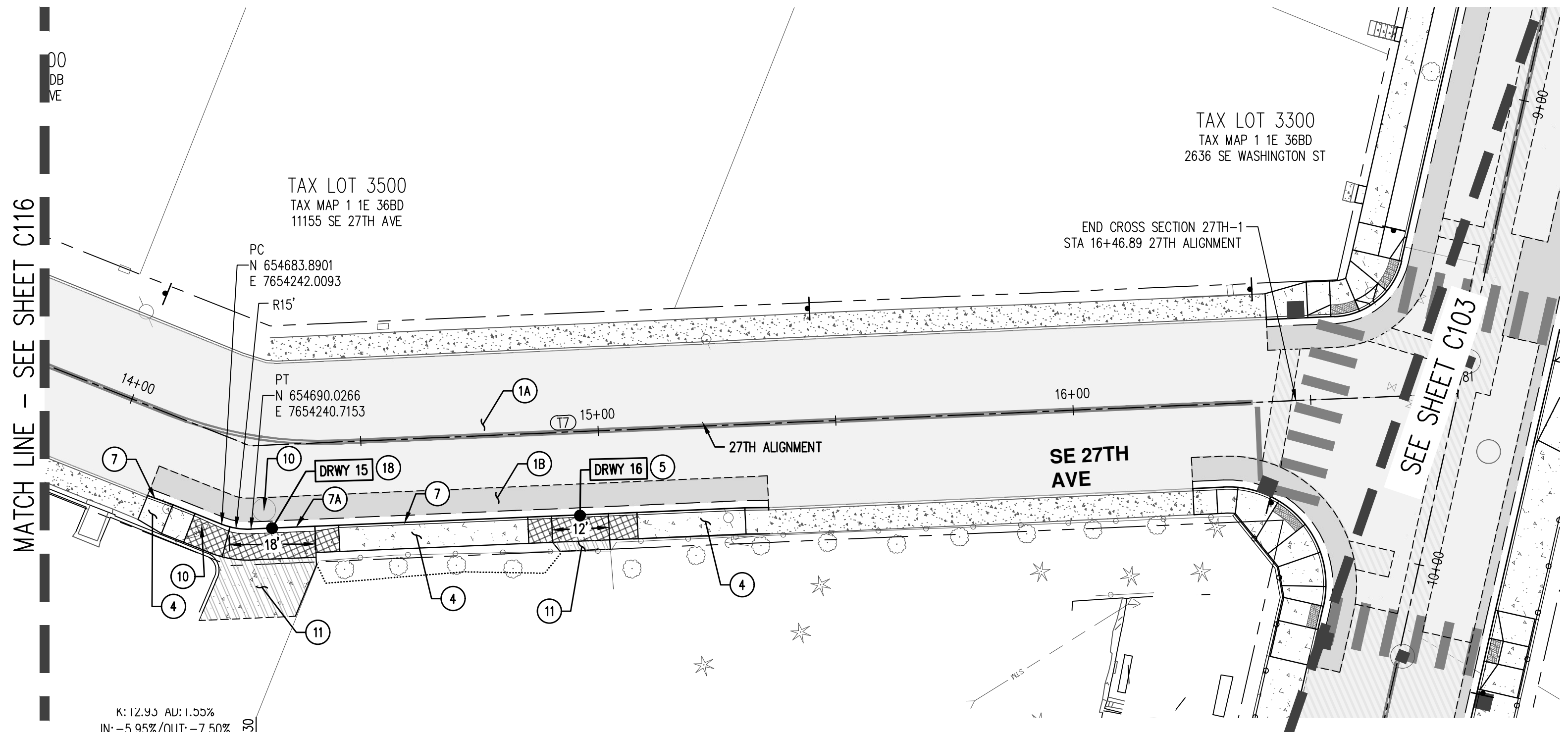
DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC



JOB NUMBER
8970
SHEET
C116

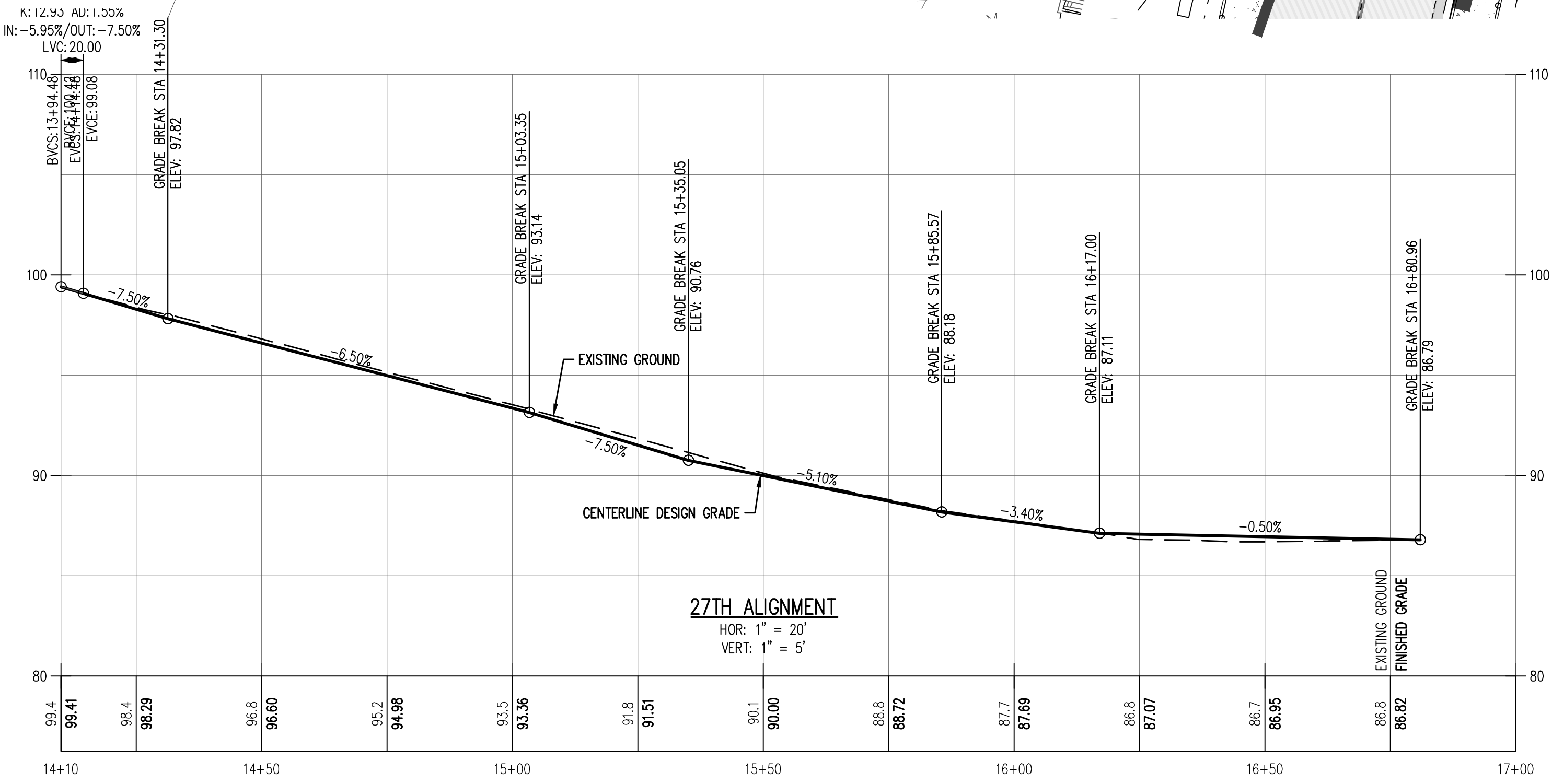
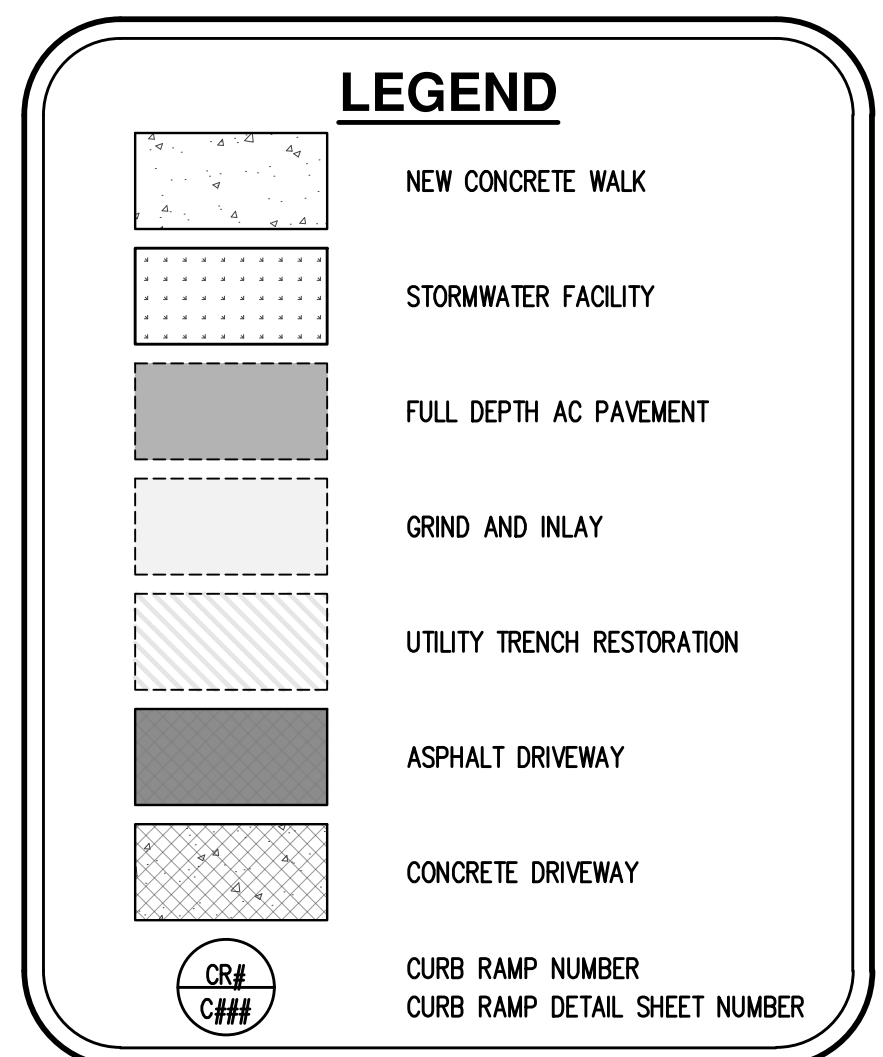
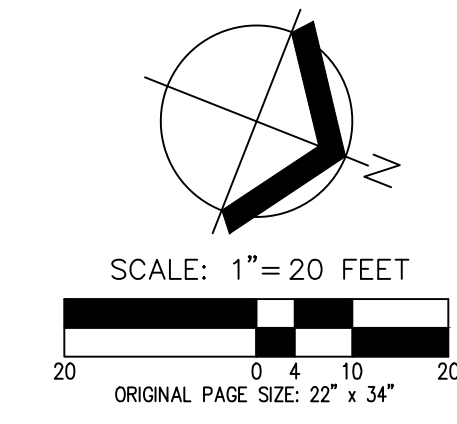


AKS DRAWING FILE: 8870 C101 STR.DWG LAYOUT: C117



DRIVEWAY TABLE			
DRIVEWAY #	STATION	OFFSET	ALIGNMENT
15	14+30.59	17.50	27TH ALIGNMENT
16	14+95.40	17.65	27TH ALIGNMENT

27TH ALIGNMENT ALIGNMENT TABLE						
CURVE/TANGENT	STATION	RADIUS	LENGTH	DELTA	CHORD	TANGENT/CHORD BEARING
T7	14+26.69		254.27'			N23°58'28"W



STREET KEYED NOTES:

- 1.A. GRIND AND INLAY.
- 1.B. FULL DEPTH AC PAVEMENT.
2. CONNECT TO EXISTING WALK.
3. INSTALL AC PAVEMENT SURFACE RESTORATION FOR UTILITY IMPROVEMENTS, COM 510, SHEET C180.
4. INSTALL SIDEWALK PER OSD DETAIL RD720 AND RD721, SHEET C182.
5. INSTALL DRIVEWAY PER PWS DETAILS 525 AND 526, SHEET C180.
6. INSTALL CURB RAMP WITH DETECTABLE WARNING SURFACE. SEE CURB RAMP DETAILS FOR ADDITIONAL INFORMATION, SHEETS C184-C186.
- 6A. INSTALL SIDEWALK LANDING AND TRANSITION PANELS FOR CURB RAMP AND PUSH BUTTON COMPLIANCE PER PROWAG STANDARDS.
7. INSTALL 24" STANDARD CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7A. INSTALL LOW PROFILE MOUNTABLE CURB AND GUTTER PER OSD DETAIL RD700, SHEET C181.
- 7B. INSTALL THICKENED CURB AND GUTTER PER CITY OF PORTLAND DRAWING P-540 SHEET C186.
8. INSTALL STANDARD CURB PER OSD DETAIL RD700, SHEET C181.
- 8A. INSTALL ASPHALT CURB PER OSD DETAIL RD701, SHEET C182.
9. INSTALL THICKENED EDGE SIDEWALK WITH FENCE PER DETAIL, SHEET C180 WITH FENCE PER COM DETAIL 514, SHEET C180.
- 9A. INSTALL THICKENED EDGE SIDEWALK PER DETAIL SHEET C180.
10. ADJUST EXISTING STRUCTURE TO FINISHED GRADE.
- 10A. ROTATE MANHOLE CONE 180 DEGREES. ADJUST STRUCTURE TO FINISH GRADE.
11. INSTALL CONCRETE TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
12. INSTALL AC PAVEMENT TRANSITION PANEL TO TIE INTO EXISTING DRIVEWAY.
13. INSTALL 30' BUS PAD.
14. INSTALL CUT THROUGH ISLAND, SEE DETAIL SHEET C160.
15. INSTALL DECORATIVE FENCE PER PWS DETAIL 514, SHEET C180.
16. INSTALL 3-FIT WIDE GATE PER MANUFACTURER RECOMMENDATIONS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION.
- 17A. INSTALL 4' CHAIN LINK FENCE.
- 17B. INSTALL SALVAGED FENCE.
18. INSTALL DRIVEWAY PER DRIVEWAY DETAILS, SHEETS C170 TO C177.
19. CONTRACTOR TO FIELD ADJUST AND RAISE SIDEWALK GRADE AS NECESSARY TO PROTECT EXISTING TREE(S) AND TREE ROOTS. SIDEWALK TO BE 5% MAX RUNNING SLOPE AND 2% MAX CROSS SLOPE AS CONSTRUCTED.
20. REPLACE EXISTING WEEP HOLE PER OSD DETAIL RD700, SHEET C181. CONTRACTOR TO COORDINATE WITH THE CITY FOR LOCATION DETAILS.
21. INSTALL STORM FACILITY (ALTERNATIVE SECTION) PER DETAIL SW-305, SHEET C186. STORMWATER FACILITY PLANTING TO BE 1-GALLON HERBACEOUS PLANTS, EVEN MIX OF SPREADING RUSH (JUNCUS PATENS) AND SLOUGH SEDGE (CAREX OBNUPTA), AT 18" O.C. TRIANGULAR SPACING.
22. INSTALL MULTIPLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOX ON NEW POST. CONTRACTOR TO COORDINATE WITH PRIVATE RESIDENCE.
23. INSTALL SINGLE SUPPORT AND INSTALL SALVAGED MAILBOXES PER OSD DETAILS RD100, SHEET C181 AND RD101, SHEET C181. PLACE SALVAGED MAILBOXES ON NEW POST. COORDINATE WITH PRIVATE RESIDENCE.
24. INSTALL CONCRETE INLET PER CITY OF PORTLAND DRAWING P-300, SHEET C187.
25. INSTALL 5-FIT TALL WESTERN RED CEDAR TREE PER MILWAUKIE STANDARD DRAWING 513. DO NOT INSTALL ROOT BARRIER. COORDINATE WITH CITY AND PROPERTY OWNER FOR LOCATION PRIOR TO INSTALLATION.

GENERAL NOTES:

1. SEE TYPICAL STREET SECTIONS FOR PAVEMENTS DEPTH, SIDEWALK WIDTHS AND ADDITIONAL INFORMATION.
2. SEE SIGNAGE AND STRIPING PLANS FOR SIGNAGE AND STRIPING INSTALLATION DETAILS.
3. SEE CURB RAMP DETAILS FOR CURB RETURN PROFILE, RAMP DIMENSIONS AND GRADING DETAILS.
4. CONTRACTOR TO COORDINATE WITH CITY ON ALL STREET IMPROVEMENTS.
5. ALL SIDEWALK GRADES BETWEEN SECTIONS WITH NEW CURB AND SECTIONS WITH EXISTING CURB SHALL TRANSITION WITH GRADES NOT TO EXCEED 4.5% NOMINAL RUNNING SLOPE (5% AS CONSTRUCTED).
6. ALL NEW CURB AND GUTTER HEIGHT AND SLOPE SHALL MATCH EXISTING GRADES AT MATCH POINTS. TRANSITION CURB HEIGHT TO BE SMOOTH AND OCCUR OVER 2' - 4' IN LENGTH.
7. RESTORE DISTURBED GROUNDS WITH LANDSCAPING PER THE FOLLOWING:
 - EXISTING PLANTED OR MULCHED AREAS TO BE RESTORED WITH MULCH.
 - EXISTING AREAS WITH DECORATIVE ROCK TO BE RESTORED WITH SALVAGED DECORATIVE ROCK. SALVAGE AND STOCKPILE ROCK AS NECESSARY FOR CONSTRUCTION.
 - EXISTING LAWN AREAS TO BE RESTORED WITH LAWN SEED PER THE FOLLOWING SEED MIX:
 - 30% LOLIUM PERENNE 'BLAZER 4' (BLAZER 4 PERENNIAL RYEGRASS)
 - 30% LOLIUM PERENNE 'EXPRESS II' (EXPRESS II PERENNIAL RYEGRASS)
 - 20% FESTUCA RUBRA SPP. FALLAX VAR. WINDWARD (WINDWARD CHEWINGS FESCUE)
 - 20% FESTUCA RUBRA COMMUTATA VAR. GARNETT (GARNETT CREEPING CHEWINGS FESCUE)
8. CONTRACTOR TO PROTECT EXISTING ASPHALT NOT INDICATED FOR REMOVAL FOR TRENCH RESTORATION OR FULL DEPTH PAVEMENT. ANY REMAINING EXISTING ASPHALT PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE SAWCUT, REMOVED, AND RESTORED AS UTILITY TRENCH RESTORATION PRIOR TO MILL AND INLAY.
9. CONTRACTOR TO ENSURE ALL SIDEWALK MAINTAINS A MINIMUM 4' CLEAR WIDTH.

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12065 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM
 ENGINEERING - SURVEYING - NATURAL RESOURCES
 FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
 AREA IMPROVEMENTS**
 OREGON
MILWAUKIE
 CLATSOP COUNTY

**27TH AVE STREET
 PLAN AND PROFILE**

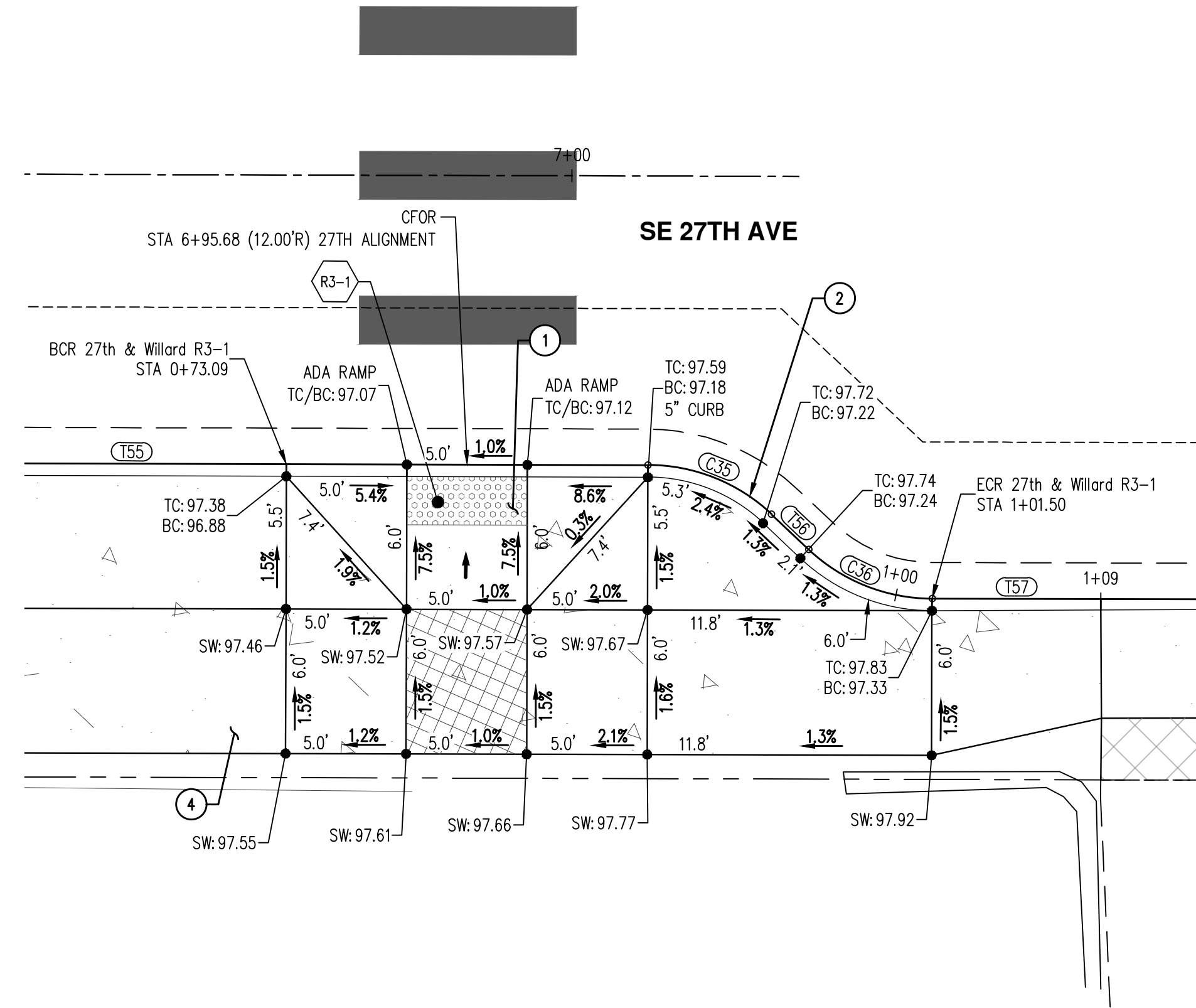
DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC

DATE: 06/07/2024

 RENEWAL DATE: 12/31/25
 REVISIONS:

JOB NUMBER
8970
 SHEET
C117

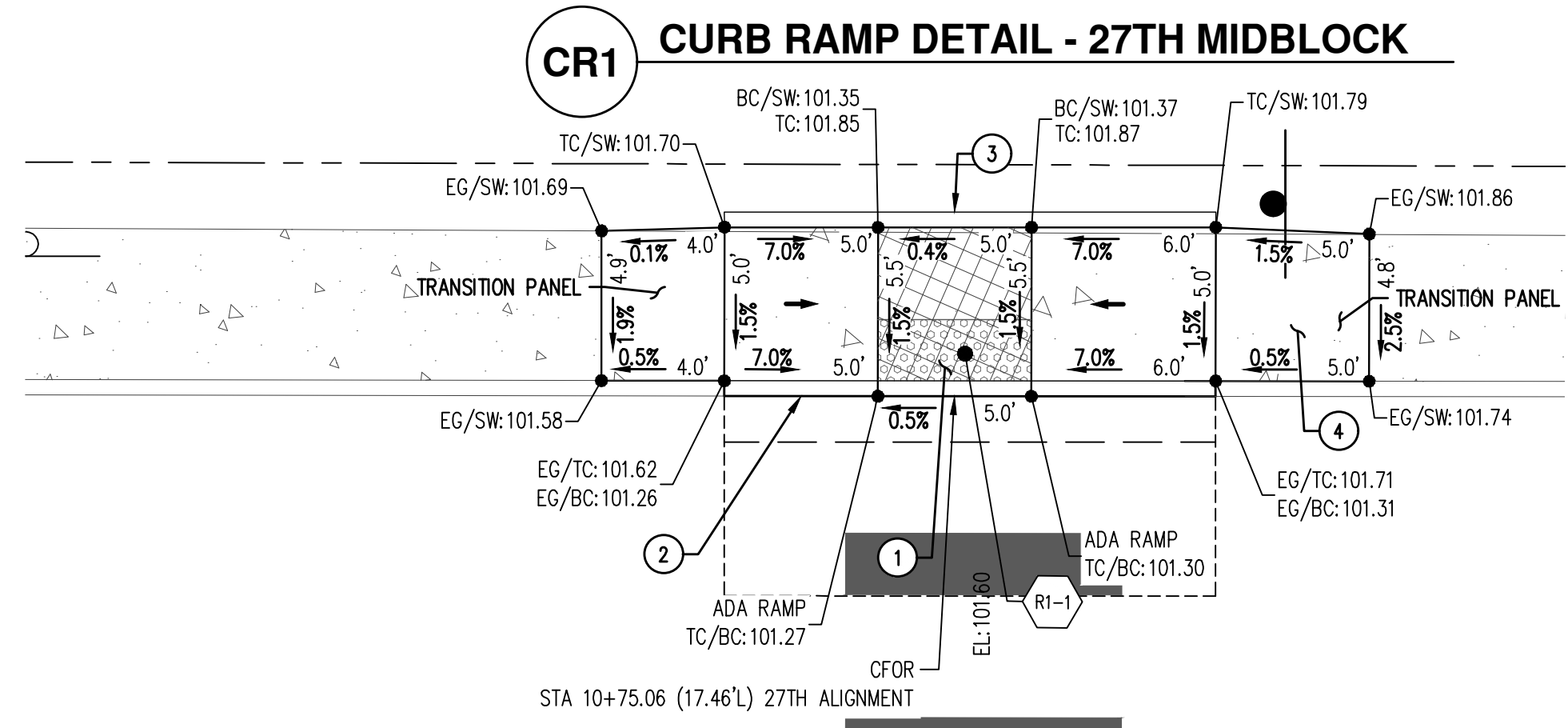
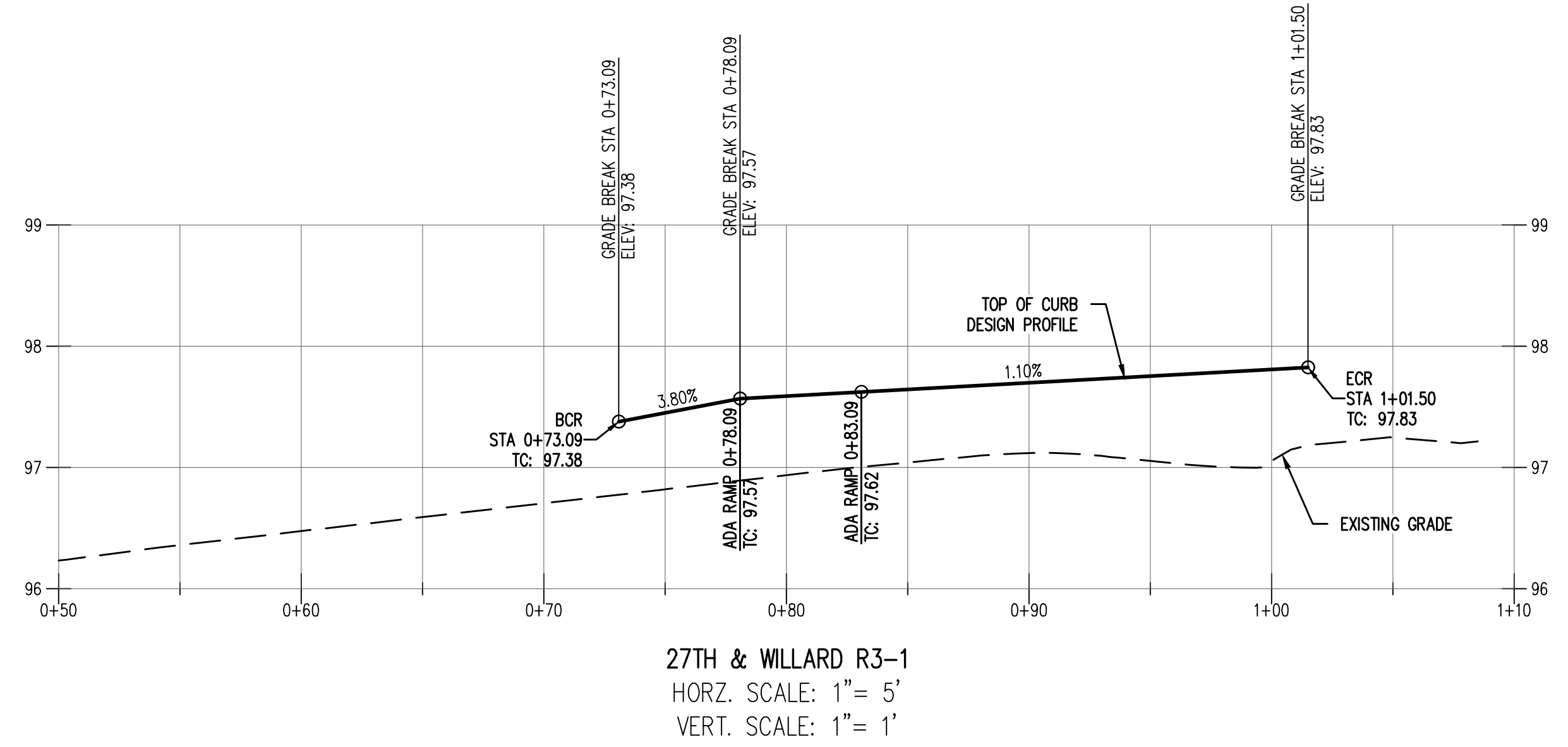




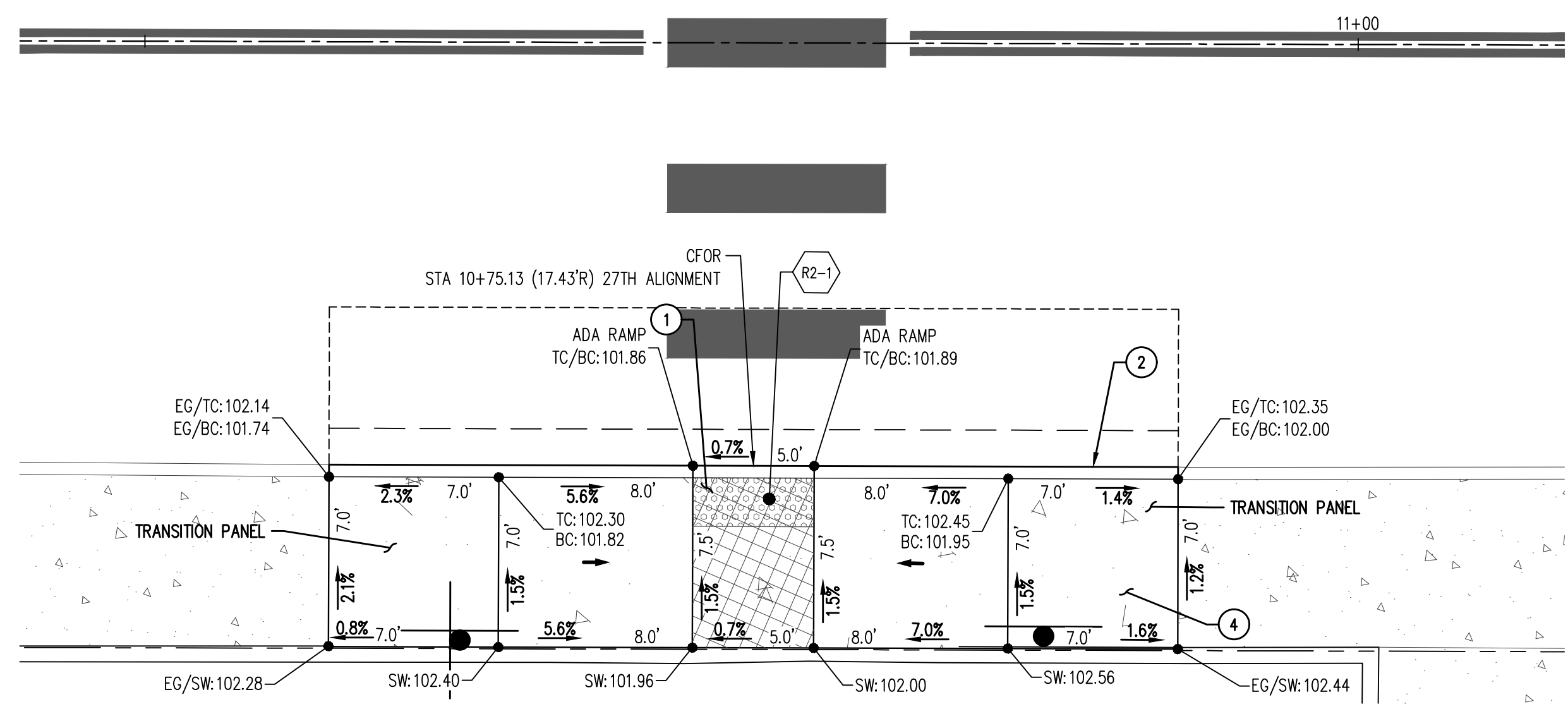
CR3 CURB RAMP DETAIL - 27TH & WILLARD

27th & Willard R3-1 ALIGNMENT TABLE

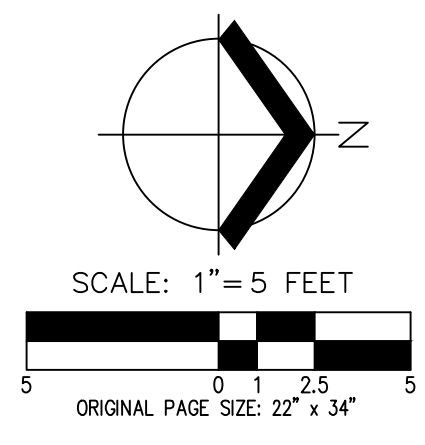
CURVE/TANGENT	STATION	RADIUS	DELTA	LENGTH	CHORD	TANGENT/CHORD BEARING
T55	0+33.28			54.81'		N00°09'28"E
C35	0+88.09	7.50'	43°06'43"	5.64'	5.51	N21°42'49"E
T56	0+93.73			2.12'		N43°16'10"E
C36	0+95.86	7.50'	43°06'39"	5.64'	5.51	N21°42'51"E
T57	1+01.50			7.00'		N00°09'32"E



CR2 CURB RAMP DETAIL - 27TH MIDBLOCK



CR1 CURB RAMP DETAIL - 27TH MIDBLOCK



GENERAL NOTES:

- SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
- SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
- VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW RAMP/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
- CONSTRUCT ALL SIDEWALK/RAMPS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL CONTACT PROJECT ENGINEER/INSPECTOR ONCE FORMS ARE IN PLACE, TO CHECK FORMS PRIOR TO POURING CONCRETE. CONTRACTOR TO PROVIDE A MINIMUM 48 HOUR WINDOW FOR INSPECTION.
- TOP OF CURVE ELEVATIONS SHOWN ON PROFILES REPRESENT FULL HEIGHT CURB AND DO NOT REFLECT DROPS IN CURB OR CURB RAMPS.

KEYED NOTES:

- INSTALL DETECTABLE WARNING SURFACE.
- INSTALL STANDARD CURB AND GUTTER.
- INSTALL STANDARD CURB.
- INSTALL CONCRETE SIDEWALK.

LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DETECTABLE WARNING SURFACE
- LANDING/TURNING SPACE
- RAMP RUNNING SLOPE
- RAMP NUMBER
- SAWCUT

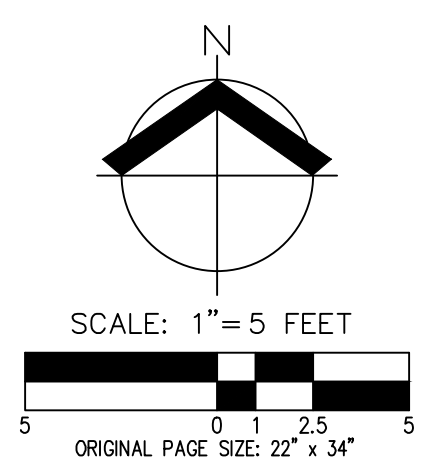
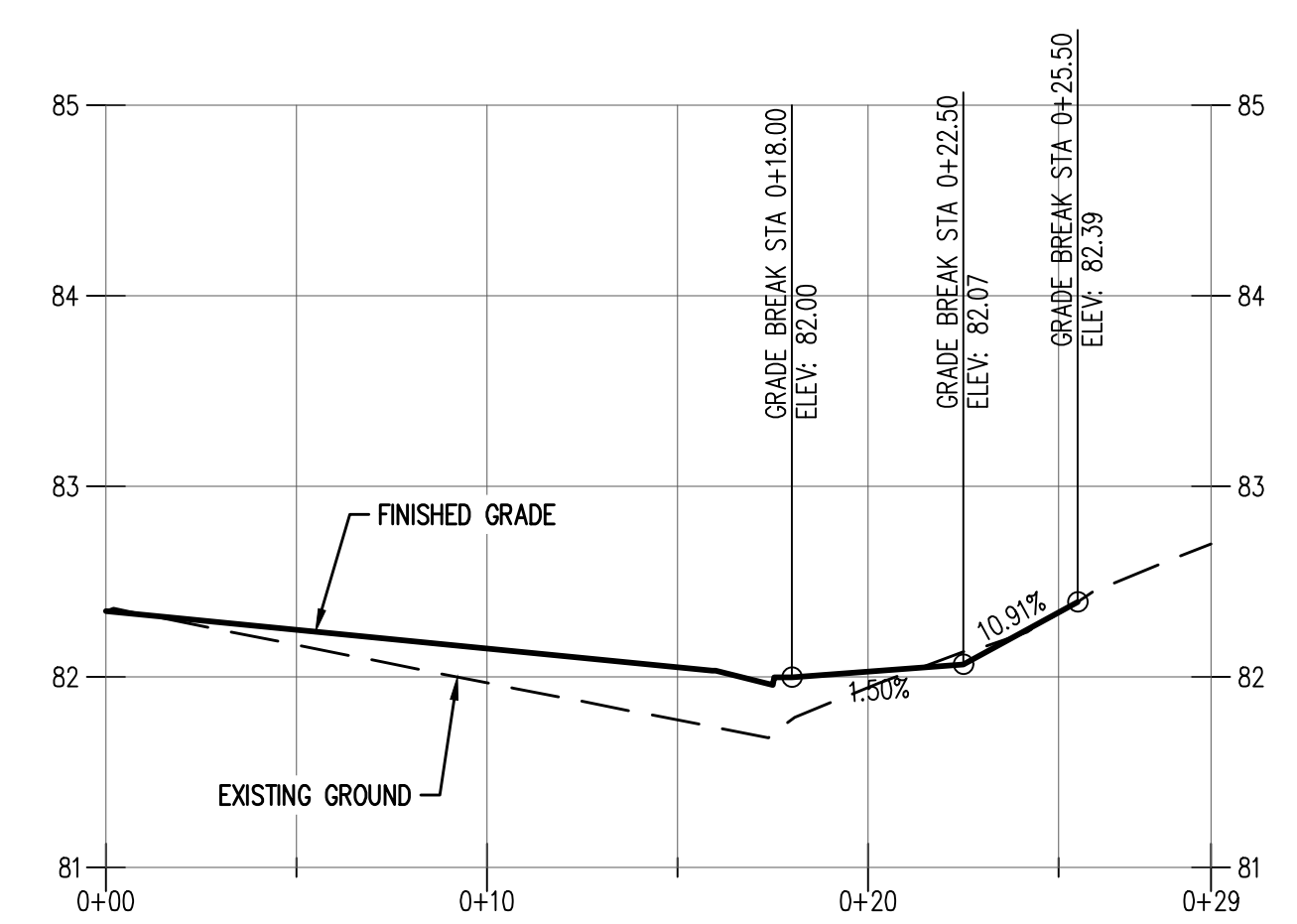
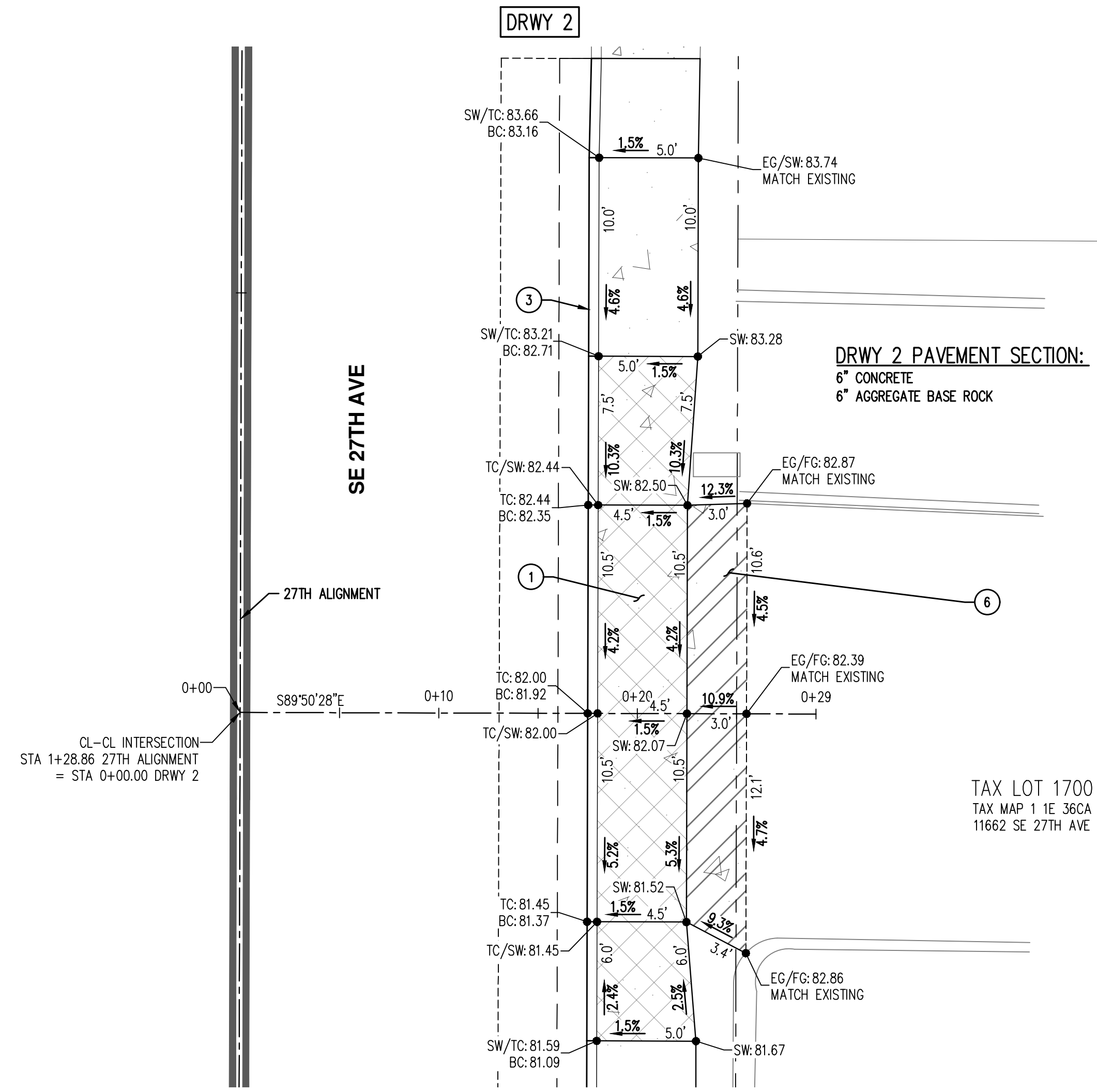
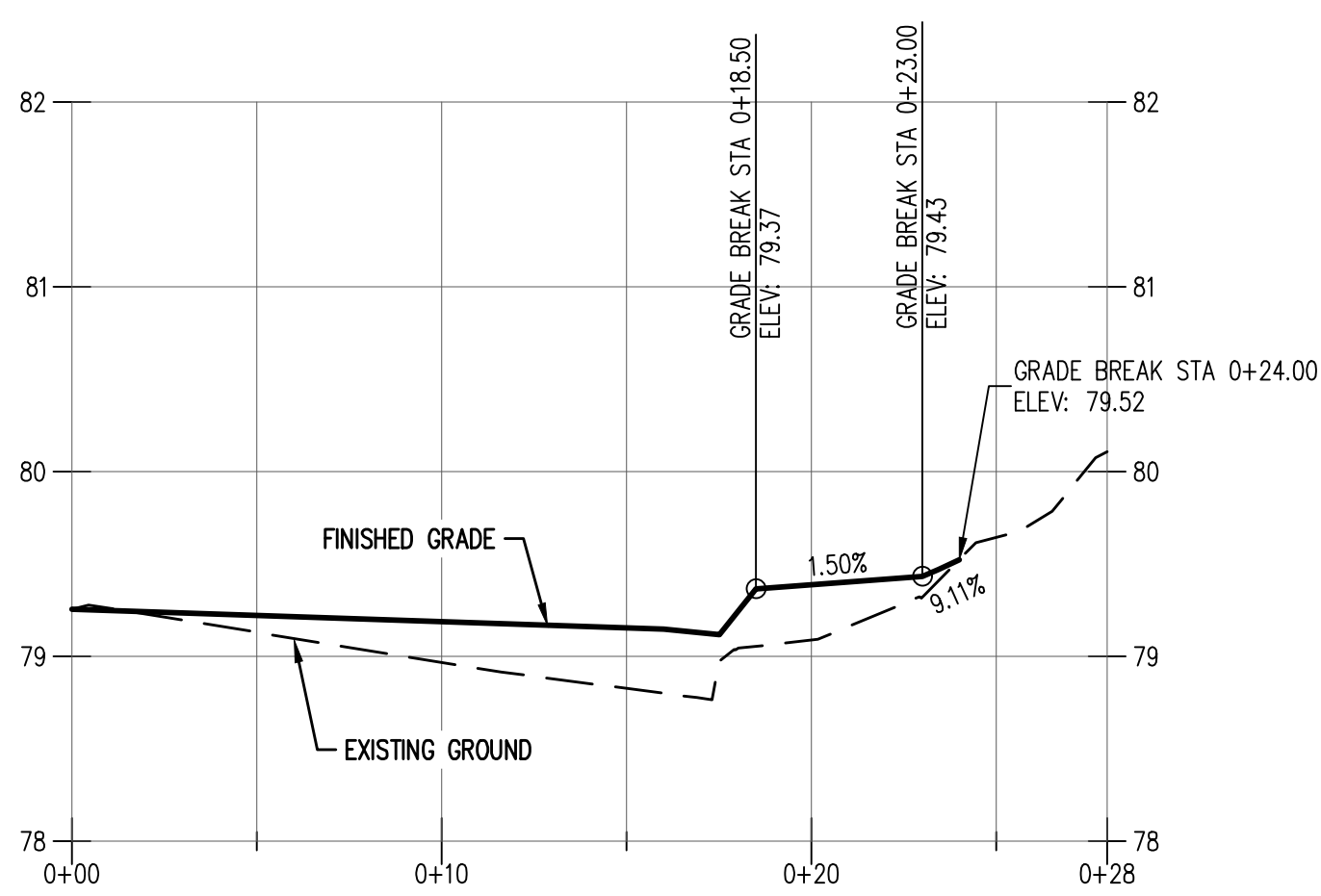
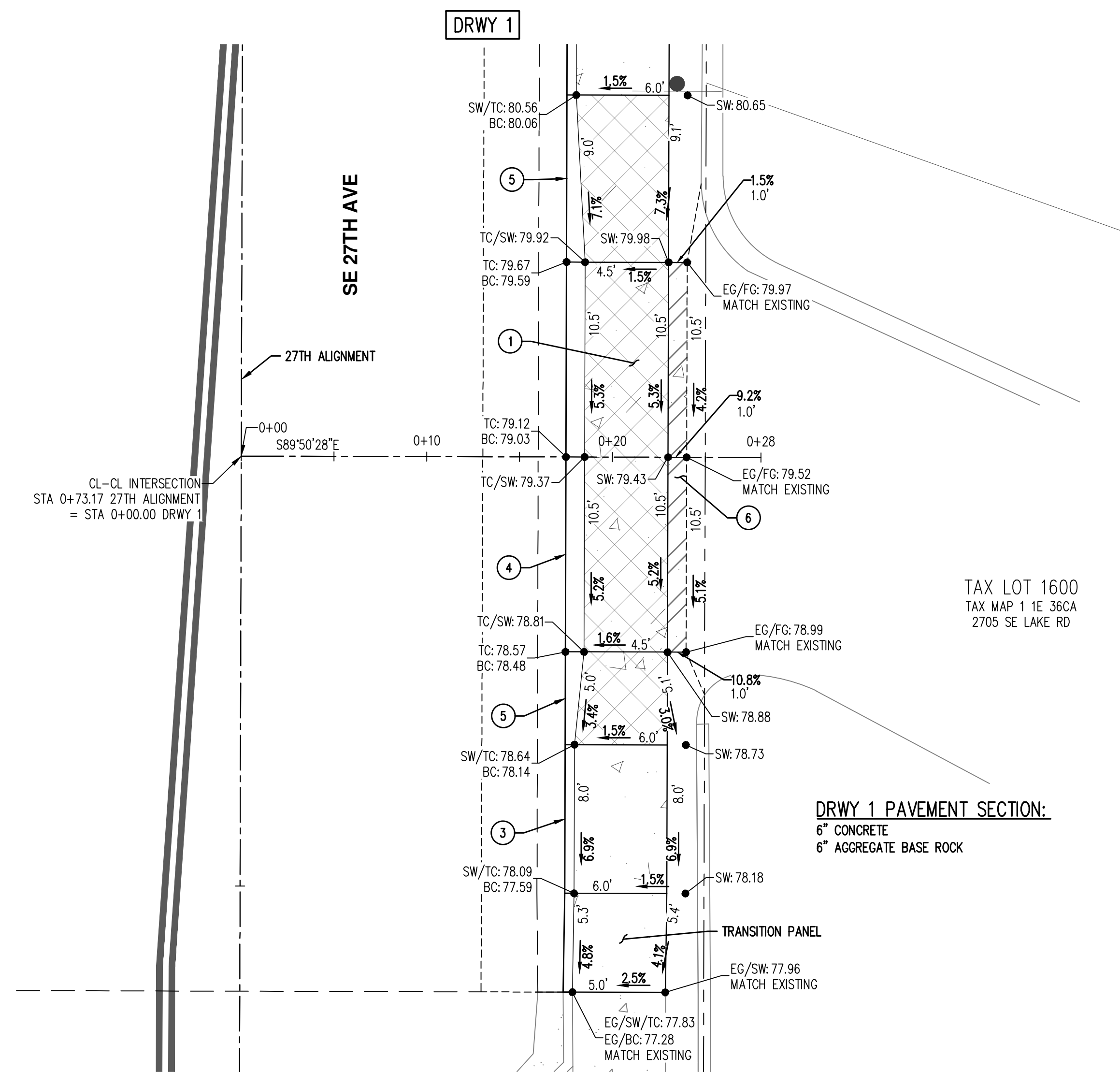
ABBREVIATIONS

- BC = BOTTOM OF CURB ELEVATION
- BCR = BEGIN CURB RETURN
- BS = BOTTOM STEP ELEVATION
- CFOR = CENTER FRONT OF RAMP
- ECR = END CURB RETURN
- EG = EXISTING GROUND ELEVATION
- FG = FINISHED GRADE ELEVATION
- MID = 1/2 Δ = HALF DELTA
- SW = SIDEWALK ELEVATION
- PT = POINT OF TANGENCY
- PC = POINT OF CURVATURE
- PRC = POINT OF REVERSE CURVE
- TC = TOP OF CURB ELEVATION
- TS = TOP STEP ELEVATION

DOWNWARD SLOPE X.X%



AKS DRAWING FILE: 8870 C170 DRWY 1, 2, 3, 4.DWG | LAYOUT: C170



LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DRIVEWAY
- CONCRETE DRIVEWAY TIE-IN
- ASPHALT DRIVEWAY TIE-IN
- SAWCUT

ABBREVIATIONS

TC = TOP OF CURB ELEVATION
BC = BOTTOM OF CURB ELEVATION
SW = SIDEWALK ELEVATION
EG = EXISTING GROUND ELEVATION
FG = FINISHED GRADE ELEVATION

DOWNWARD SLOPE $\frac{x}{y}$

- GENERAL NOTES:**
- SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
 - SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
 - RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
 - REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
 - VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
 - CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
 - CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

- KEYED NOTES:**
- INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
 - INSTALL SLOPED DRIVEWAY EDGE TO TIE INTO EXISTING WALL. SEE DETAIL, SHEET C177.
 - INSTALL STANDARD CURB AND GUTTER PER OSD R0700, SHEET C181.
 - INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
 - INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
 - INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.

AKS
AKS ENGINEERING & FORESTRY, LLC
12065 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
AREA IMPROVEMENTS
MILWAUKIE
OREGON**

DRIVEWAY DETAILS

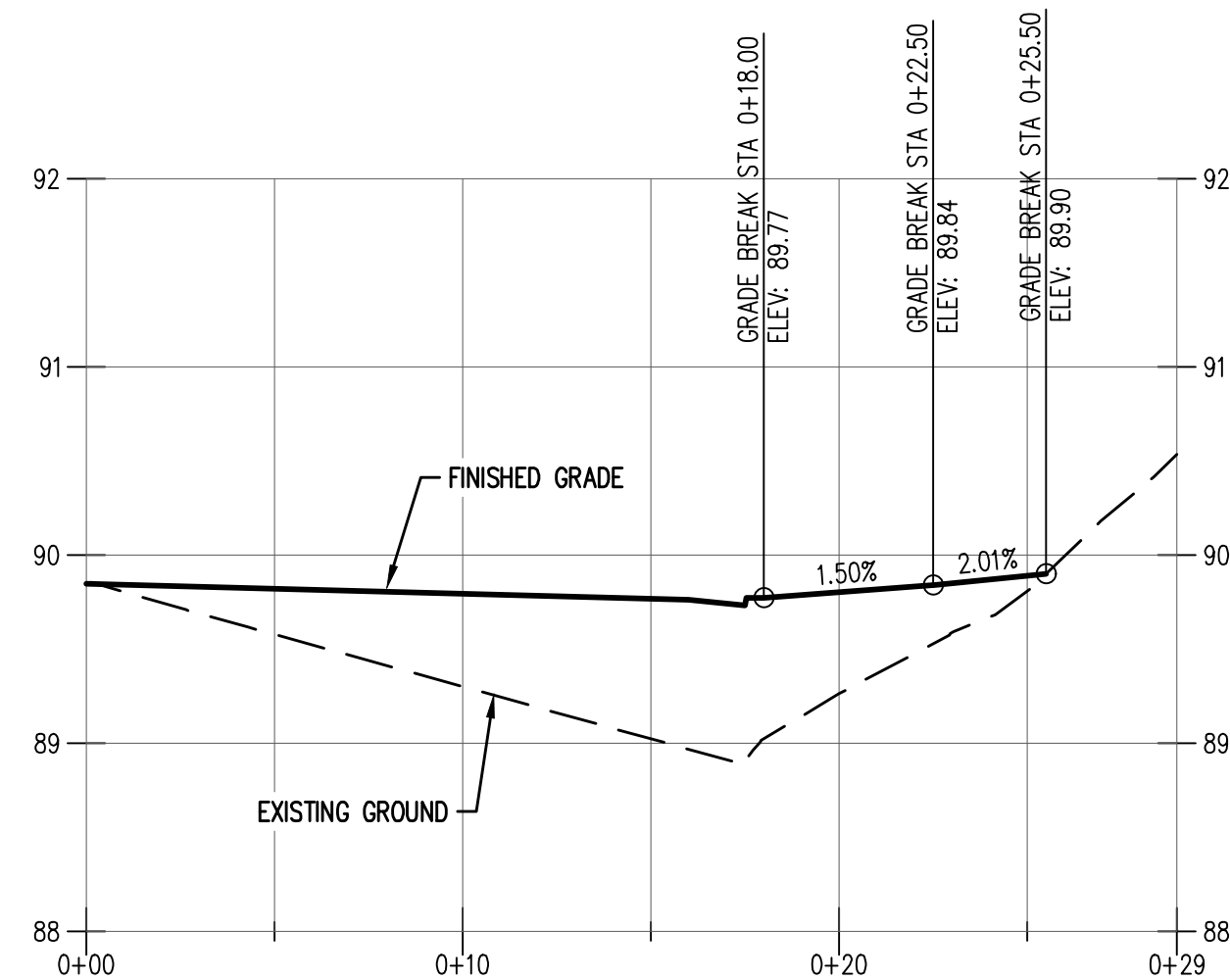
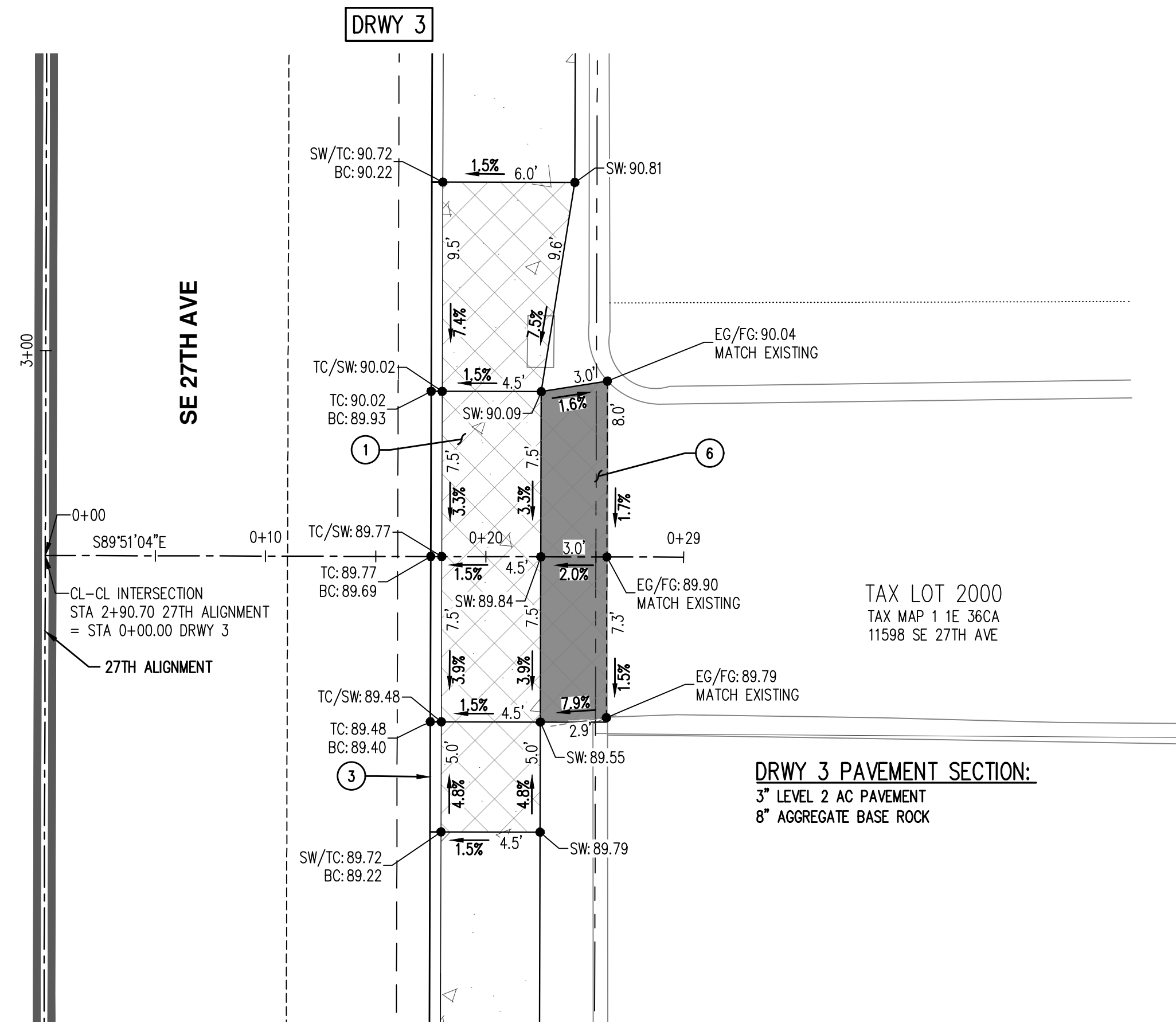
DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC
DATE: 06/07/2024

REGISTERED PROFESSIONAL ENGINEER
76382PE
ORRORON
JOHN P. CHRISTIANSEN
RENEWAL DATE: 12/31/25

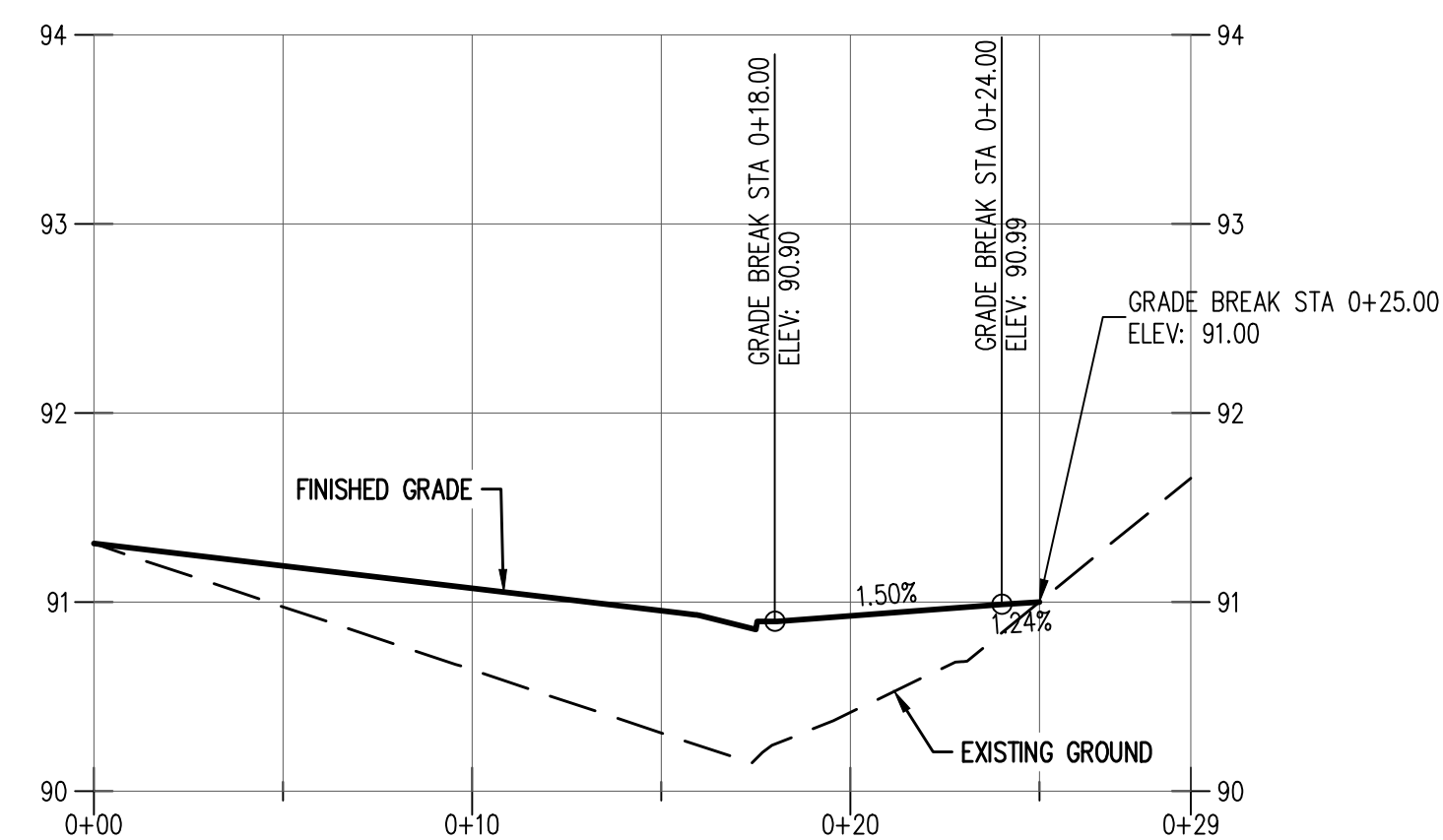
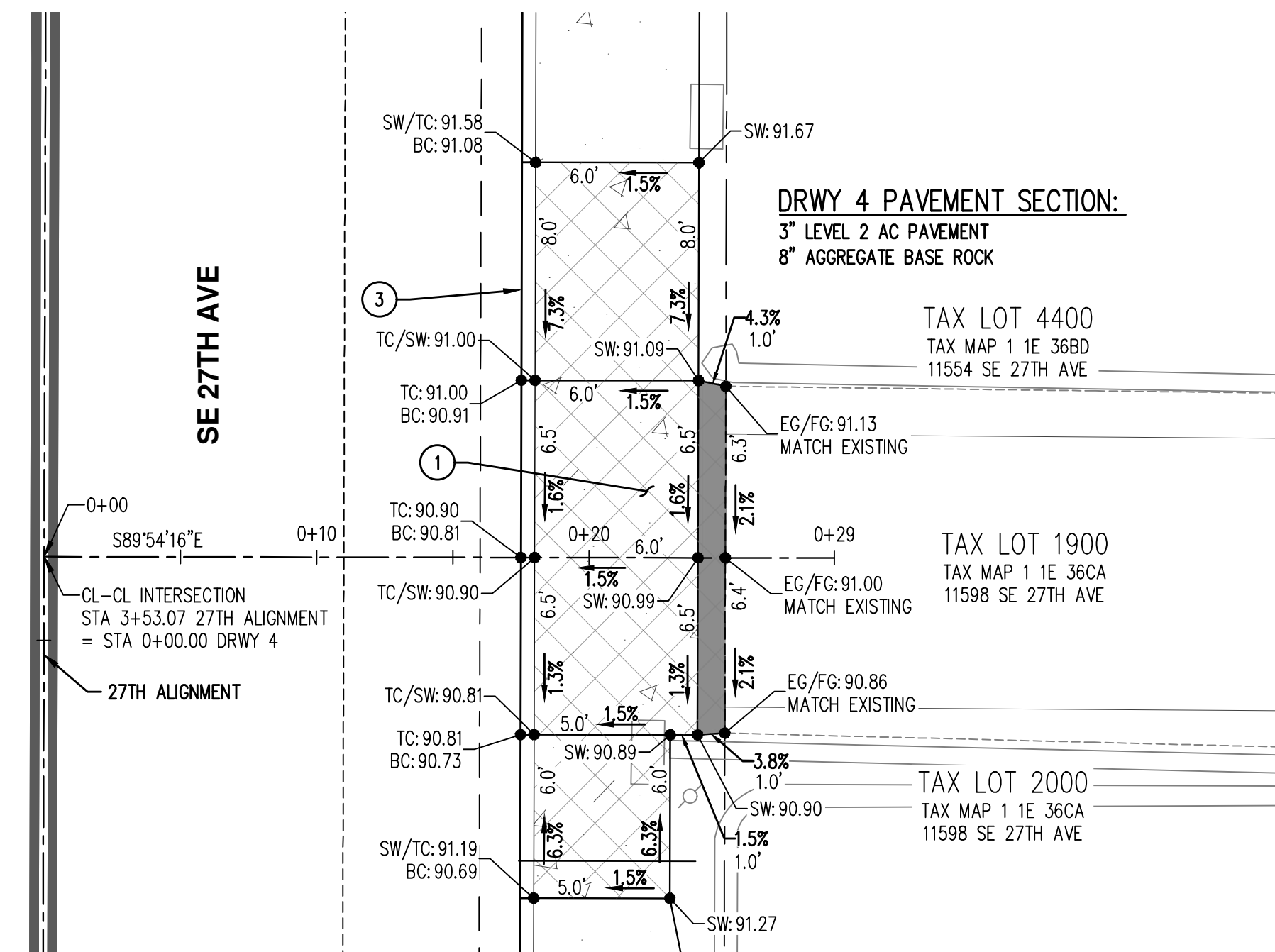
JOB NUMBER
8970
SHEET
C170



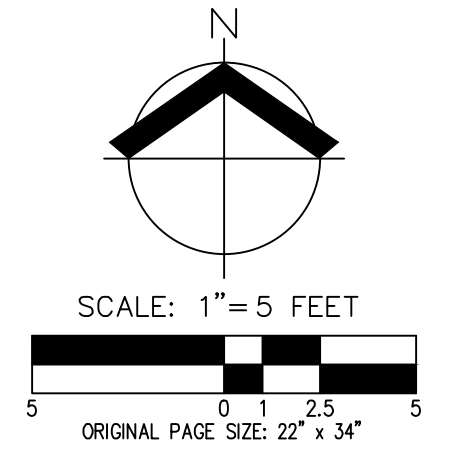
AKS DRAWING FILE: 8870 C170 DRWY 1, 2, 3, 4.DWG | LAYOUT: C171



DRWY 3
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'



DRWY 4
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'



LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DRIVEWAY
- CONCRETE DRIVEWAY TIE-IN
- ASPHALT DRIVEWAY TIE-IN
- SAWCUT

ABBREVIATIONS

TC = TOP OF CURB ELEVATION
 BC = BOTTOM OF CURB ELEVATION
 SW = SIDEWALK ELEVATION
 EG = EXISTING GROUND ELEVATION
 FG = FINISHED GRADE ELEVATION

DOWNWARD SLOPE X.X%

GENERAL NOTES:

1. SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
2. SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
3. RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
4. REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
5. VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
6. CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
7. CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

KEYED NOTES:

1. INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
2. INSTALL SLOPED DRIVEWAY EDGE TO TIE INTO EXISTING WALL. SEE DETAIL, SHEET C177.
3. INSTALL STANDARD CURB AND GUTTER PER OSD R0700, SHEET C181.
4. INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
5. INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
6. INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12065 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
 FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
 AREA IMPROVEMENTS**

OREGON

MILWAUKIE
 CLATSOP COUNTY

DRIVEWAY DETAILS

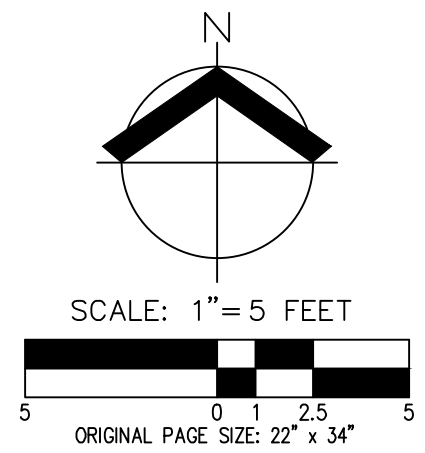
DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC
 DATE: 06/07/2024

REGISTERED PROFESSIONAL ENGINEER
 76382PE
 OREGON
 JOHN P. CHRISTIANSEN
 JUNE 29, 2009
 RENEWAL DATE: 12/31/25

JOB NUMBER
8970

SHEET
C171





LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DRIVEWAY
- CONCRETE DRIVEWAY TIE-IN
- ASPHALT DRIVEWAY TIE-IN
- SAWCUT

ABBREVIATIONS

TC = TOP OF CURB ELEVATION
 BC = BOTTOM OF CURB ELEVATION
 SW = SIDEWALK ELEVATION
 EG = EXISTING GROUND ELEVATION
 FG = FINISHED GRADE ELEVATION

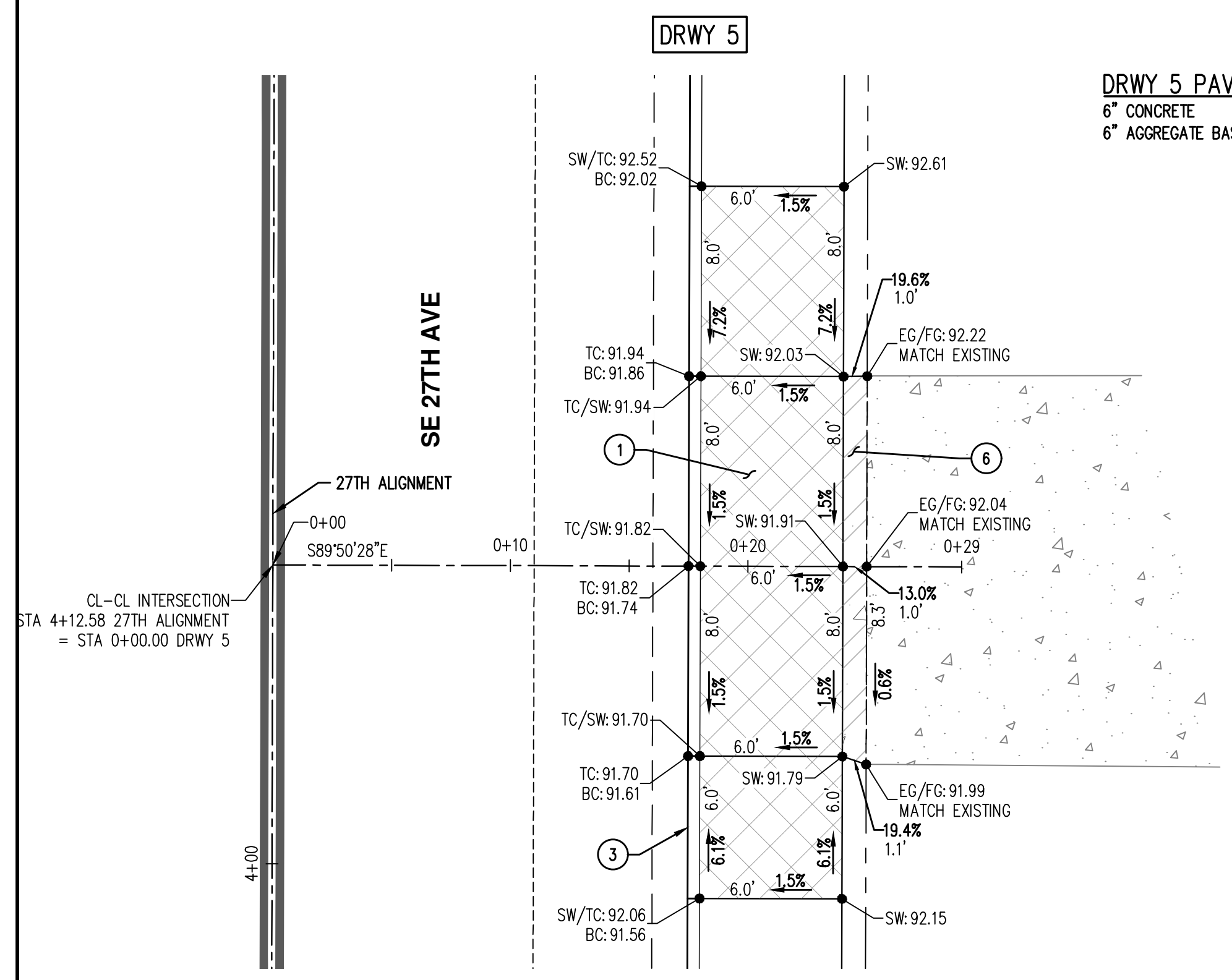
DOWNWARD SLOPE X.X%

GENERAL NOTES:

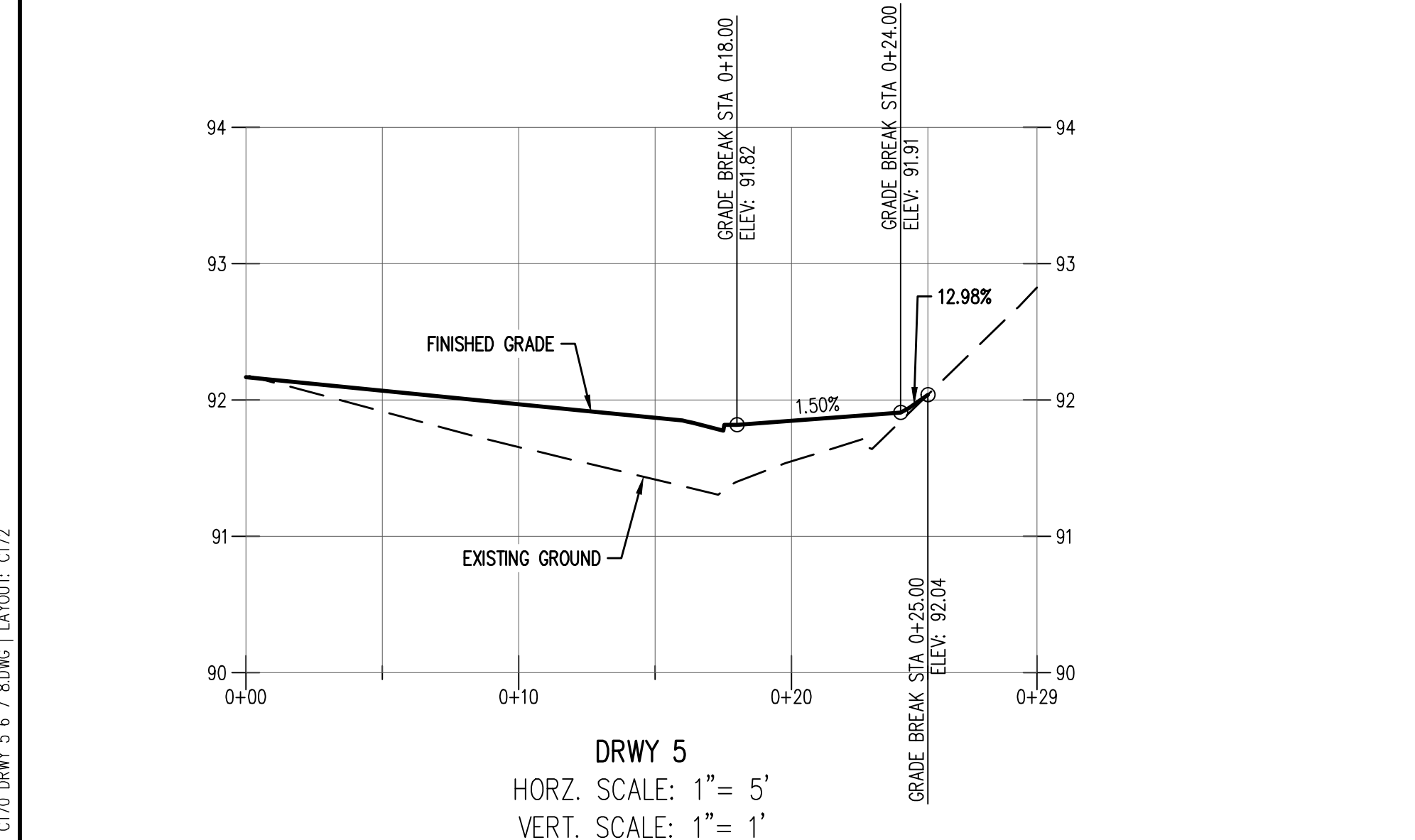
1. SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
2. SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
3. RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
4. REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
5. VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
6. CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
7. CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

KEYED NOTES:

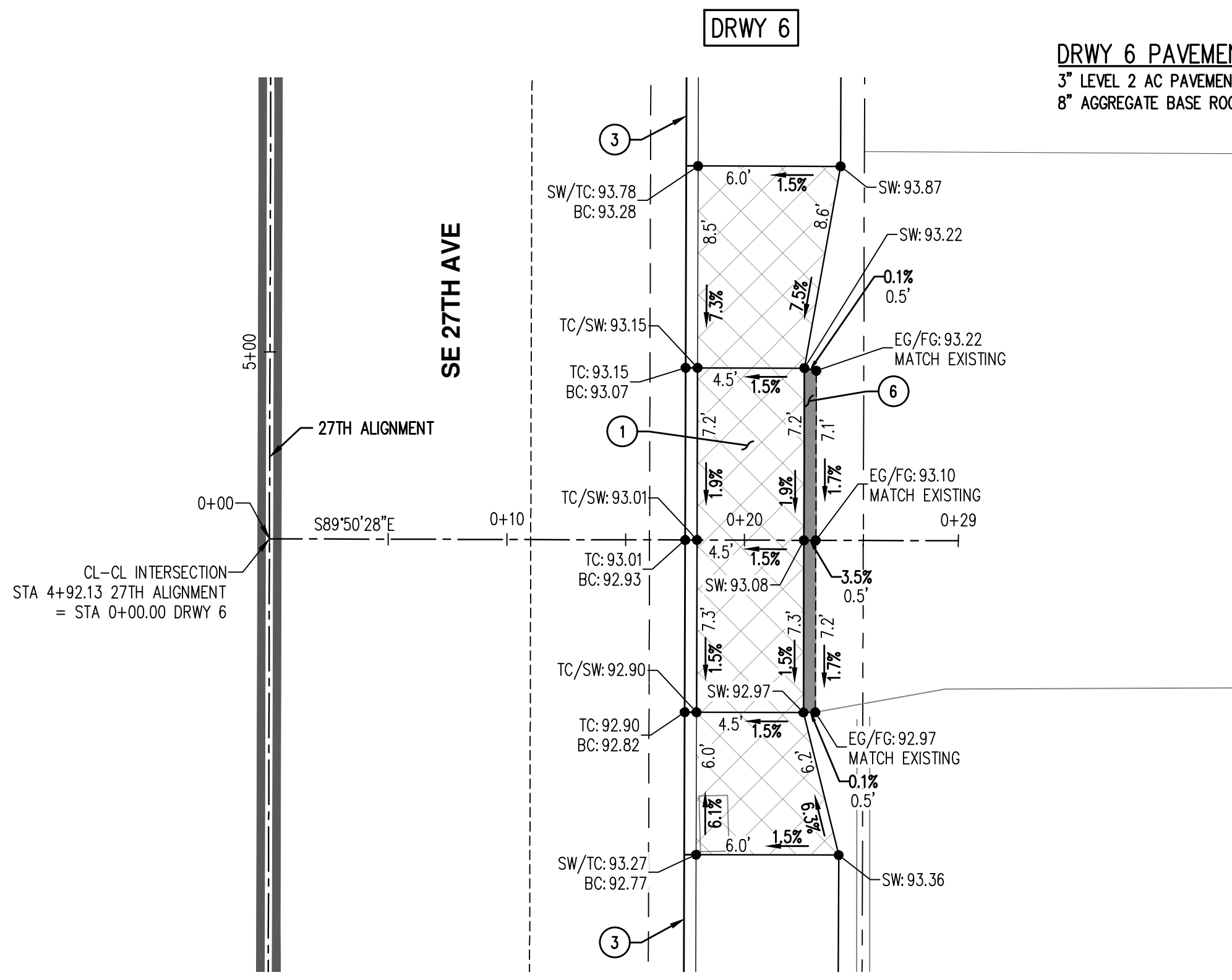
1. INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
2. NOT USED.
3. INSTALL STANDARD CURB AND GUTTER PER OSD RD700, SHEET C181.
4. INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
5. INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
6. INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.



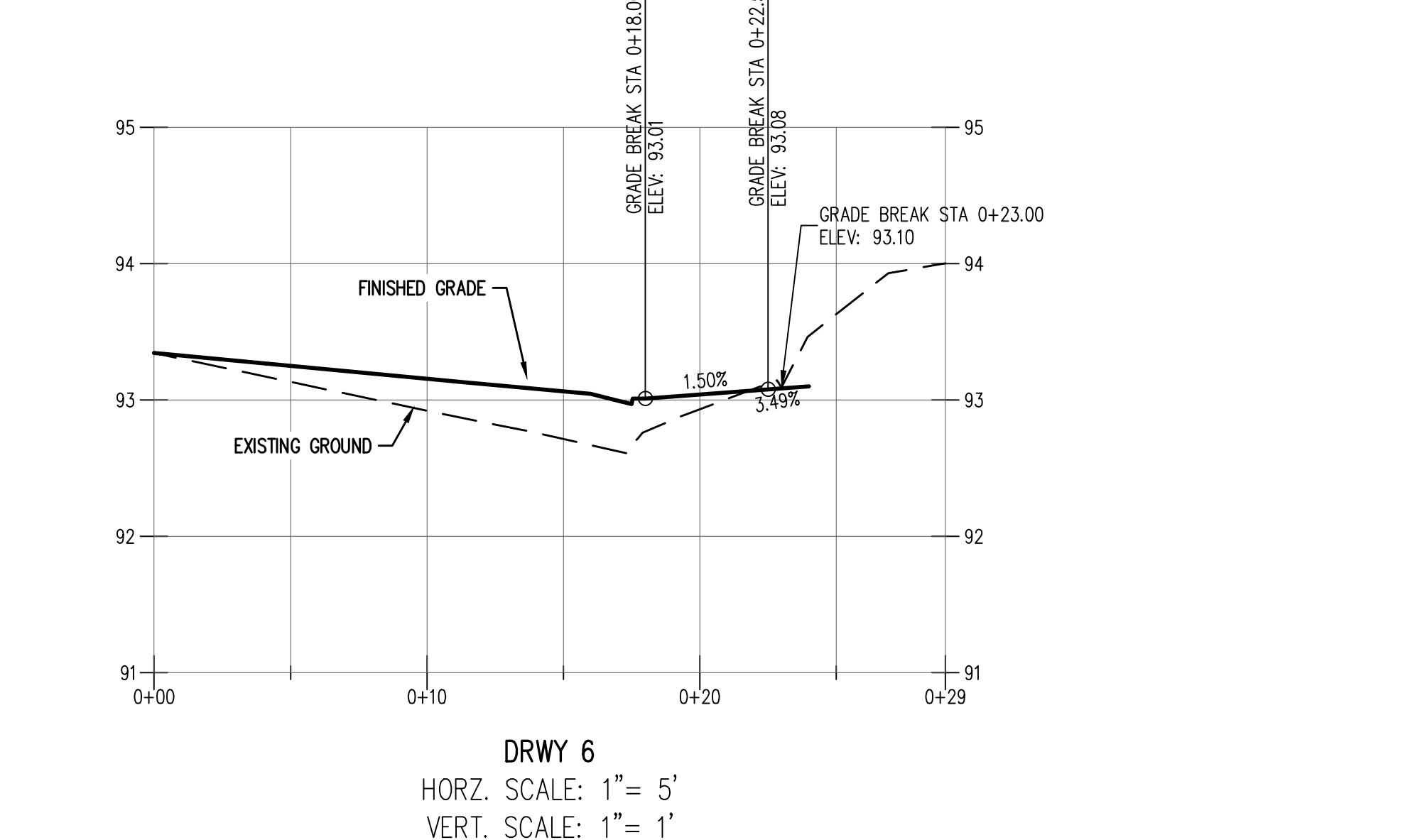
DRWY 5 PAVEMENT SECTION:
 6" CONCRETE
 6" AGGREGATE BASE ROCK



DRWY 5
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'



DRWY 6 PAVEMENT SECTION:
 3" LEVEL 2 AC PAVEMENT
 8" AGGREGATE BASE ROCK

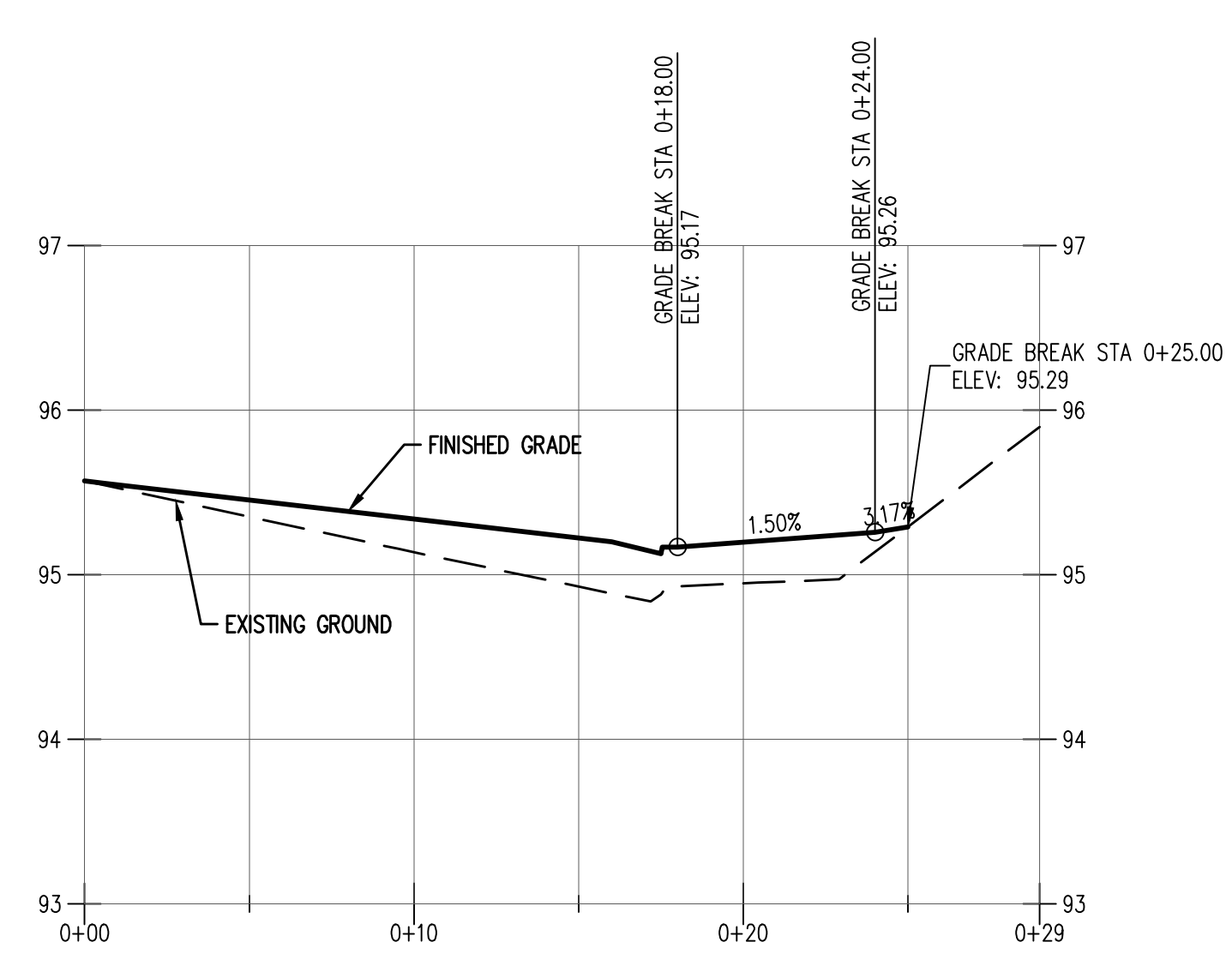
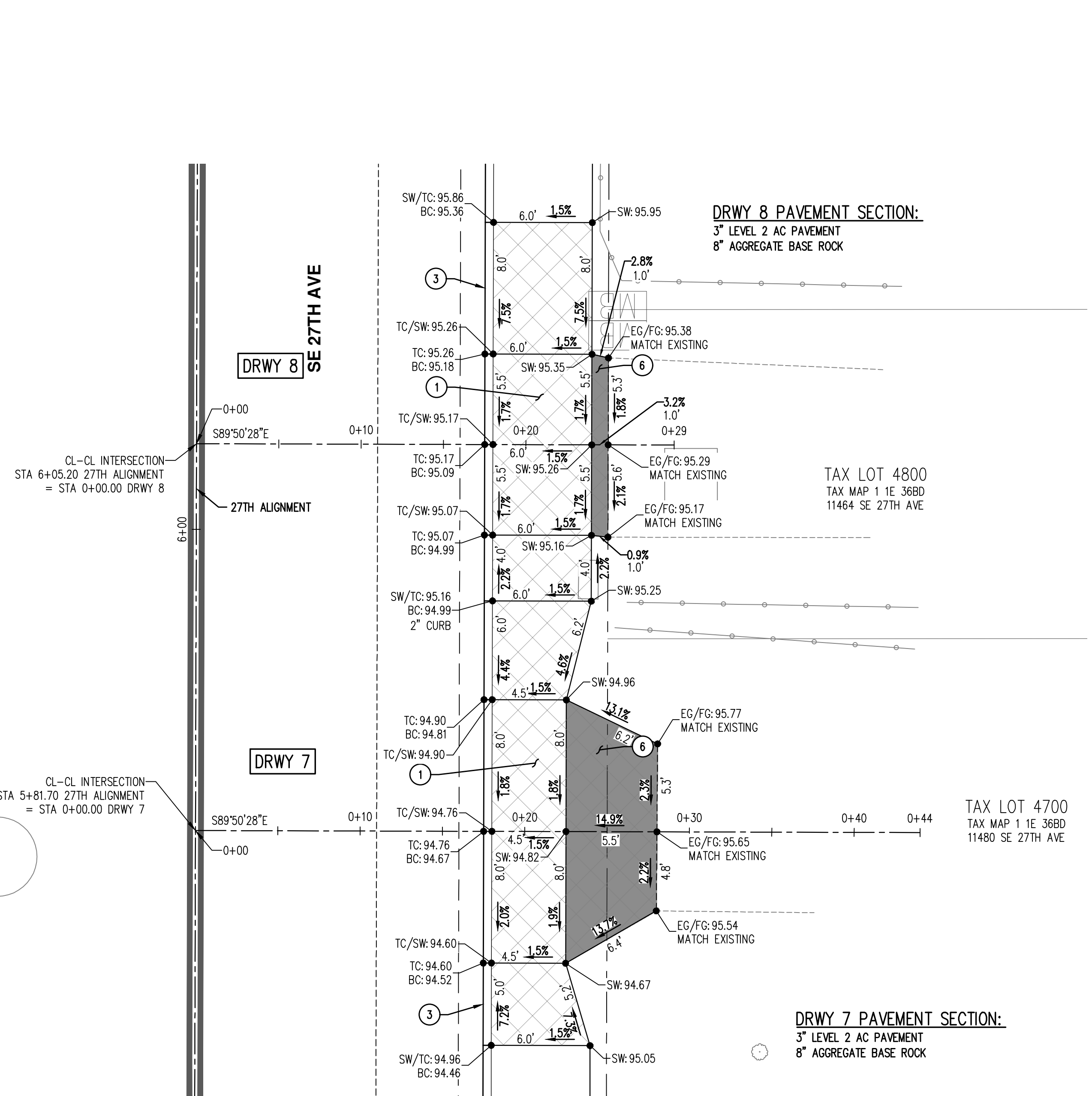


DRWY 6
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'

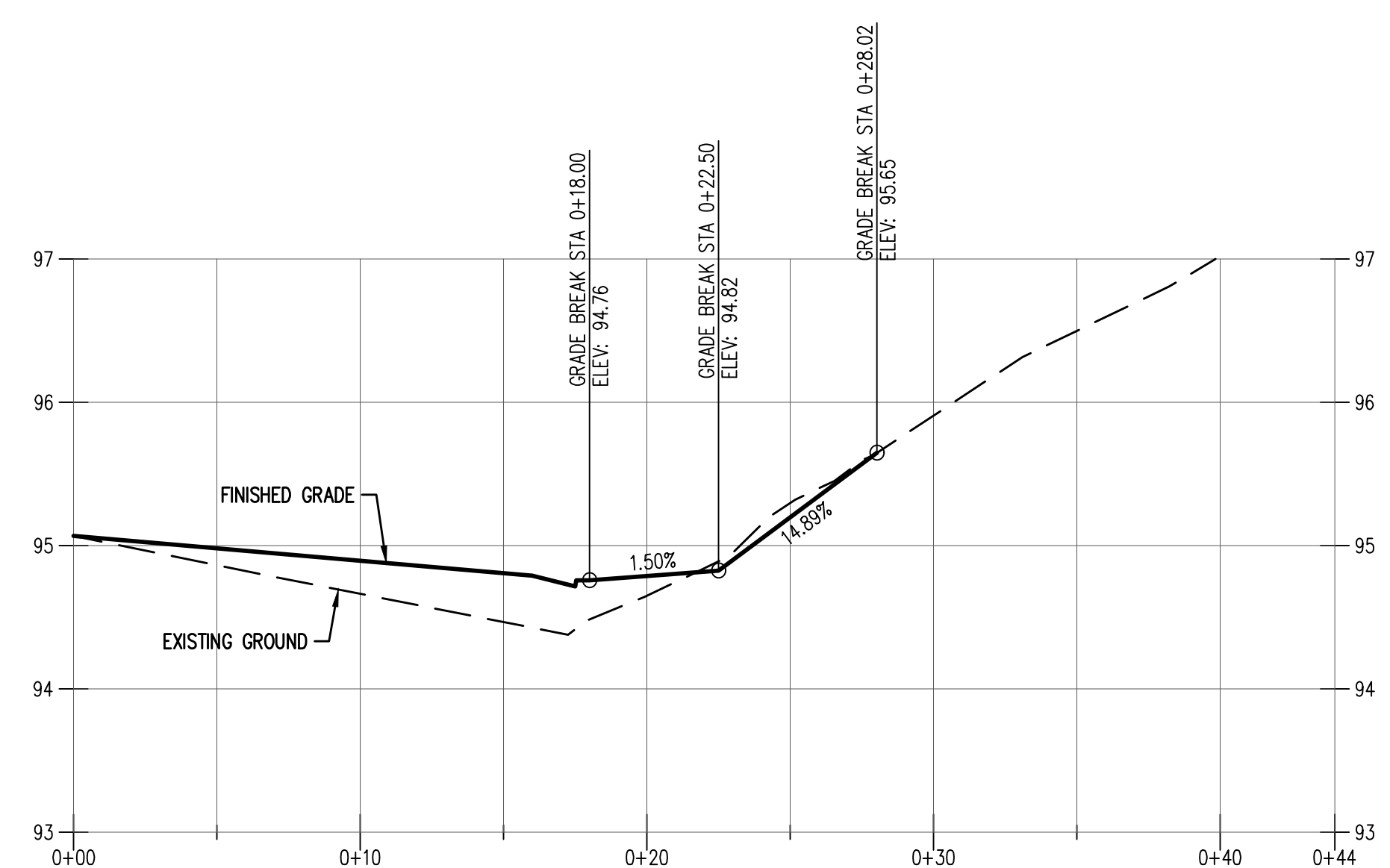
AKS DRAWING FILE: 8970 C170 DRWY 5 & 6 7 8.DWG | LAYOUT: C172



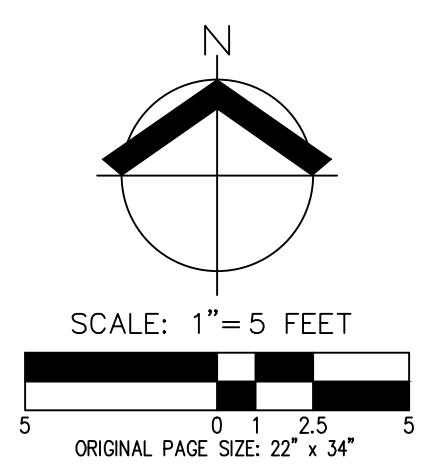
AKS DRAWING FILE: 8870 C170 DRWY 5 6 7 8.DWG | LAYOUT: C173



DRWY 8
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'



DRWY 7
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'



LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DRIVEWAY
- CONCRETE DRIVEWAY TIE-IN
- ASPHALT DRIVEWAY TIE-IN
- SAWCUT

ABBREVIATIONS

TC = TOP OF CURB ELEVATION
 BC = BOTTOM OF CURB ELEVATION
 SW = SIDEWALK ELEVATION
 EG = EXISTING GROUND ELEVATION
 FG = FINISHED GRADE ELEVATION

DOWNWARD SLOPE X.X%

- GENERAL NOTES:**
- SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
 - SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
 - RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
 - REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
 - VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3'-FT.
 - CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
 - CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

- KEYED NOTES:**
- INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
 - NOT USED.
 - INSTALL STANDARD CURB AND GUTTER PER OSD RD700, SHEET C181.
 - INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
 - INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
 - INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.

AKS
 AKS ENGINEERING & FORESTRY, LLC
 12065 SW HERMAN RD, STE 100
 TUALATIN, OR 97062
 503.563.6151
 WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
 FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
 AREA IMPROVEMENTS**
 OREGON

MILWAUKIE
 CLATSOP COUNTY

DRIVEWAY DETAILS

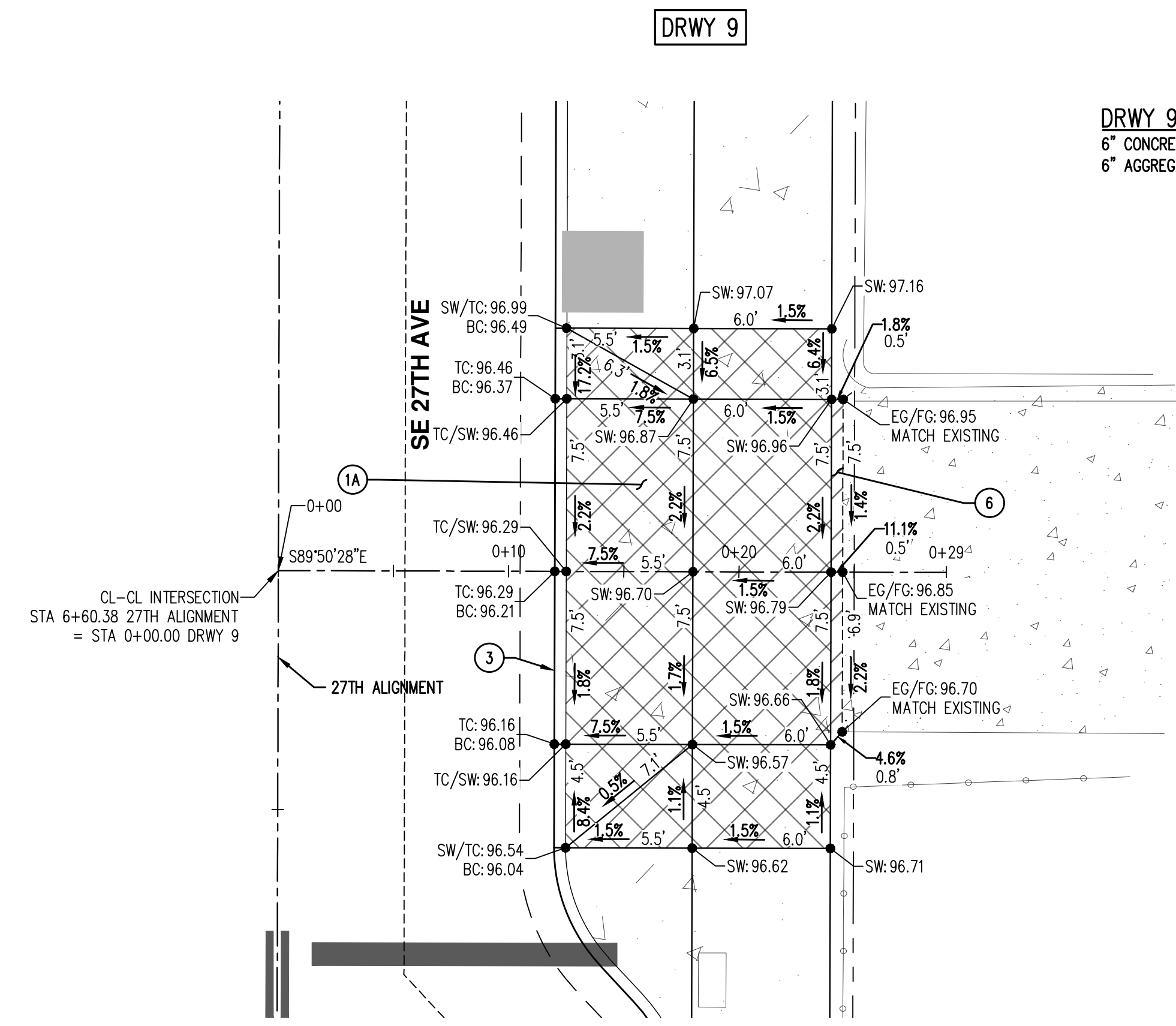
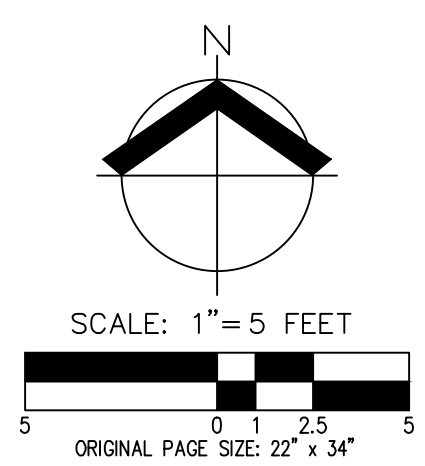
DESIGNED BY: LAH
 DRAWN BY: LAH
 MANAGED BY: JAW
 CHECKED BY: JPC
 DATE: 06/07/2024

REGISTERED PROFESSIONAL
 ENGINEER
 76382PE
 OREGON
 JOHN P. CHRISTIANSEN
 JUNE 29, 2009
 RENEWAL DATE: 12/31/25

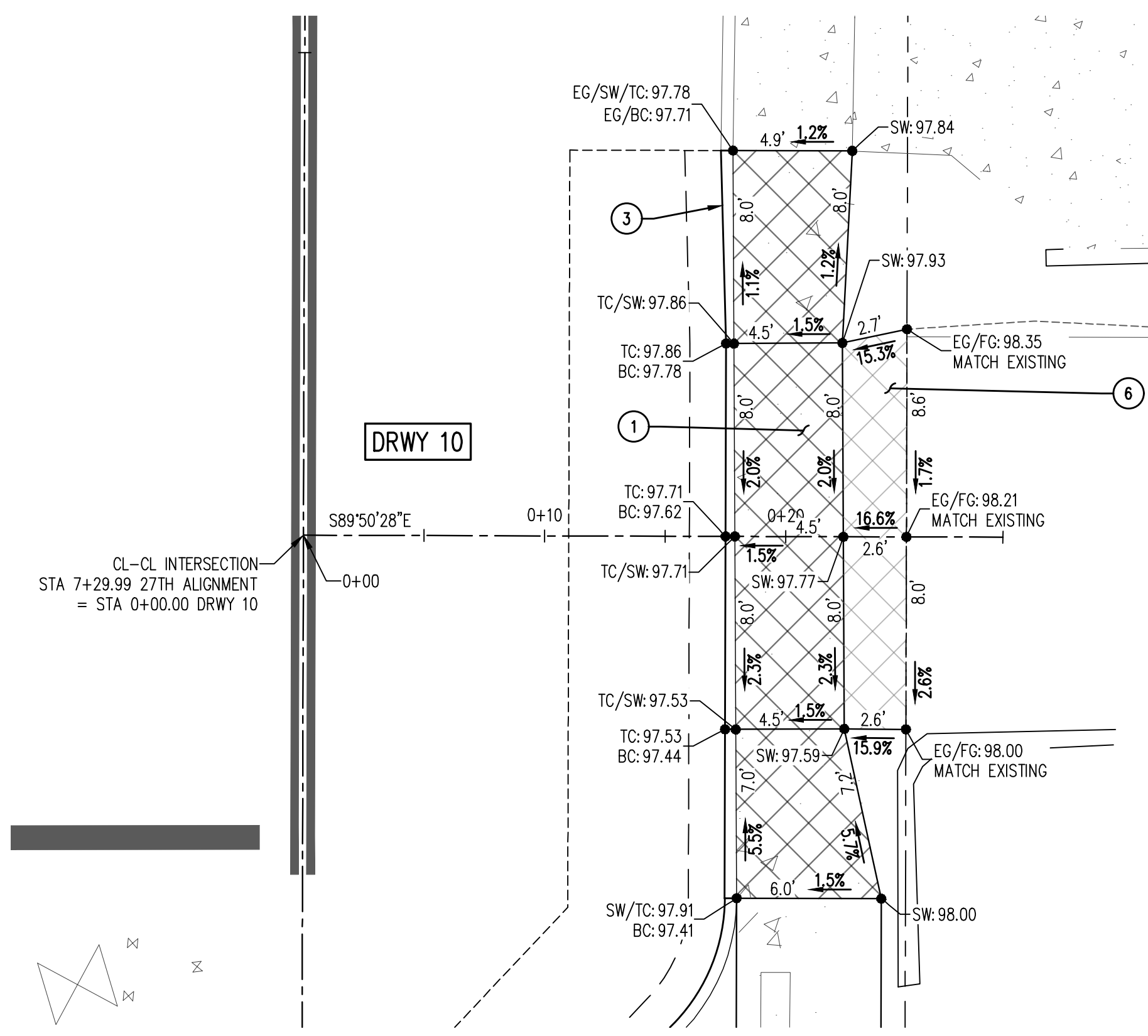
JOB NUMBER
8970

SHEET
C173

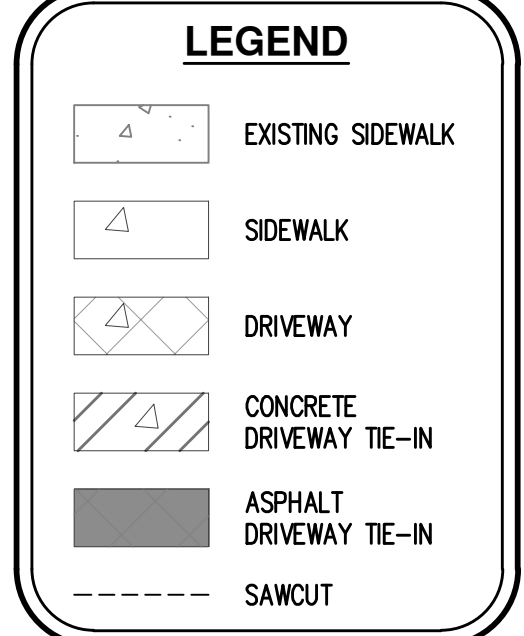




DRWY 9 PAVEMENT SECTION:
 6" CONCRETE
 6" AGGREGATE BASE ROCK



DRWY 10 PAVEMENT SECTION:
 3" LEVEL 2 AC PAVEMENT
 8" AGGREGATE BASE ROCK



ABBREVIATIONS
 TC = TOP OF CURB ELEVATION
 BC = BOTTOM OF CURB ELEVATION
 SW = SIDEWALK ELEVATION
 EG = EXISTING GROUND ELEVATION
 FG = FINISHED GRADE ELEVATION

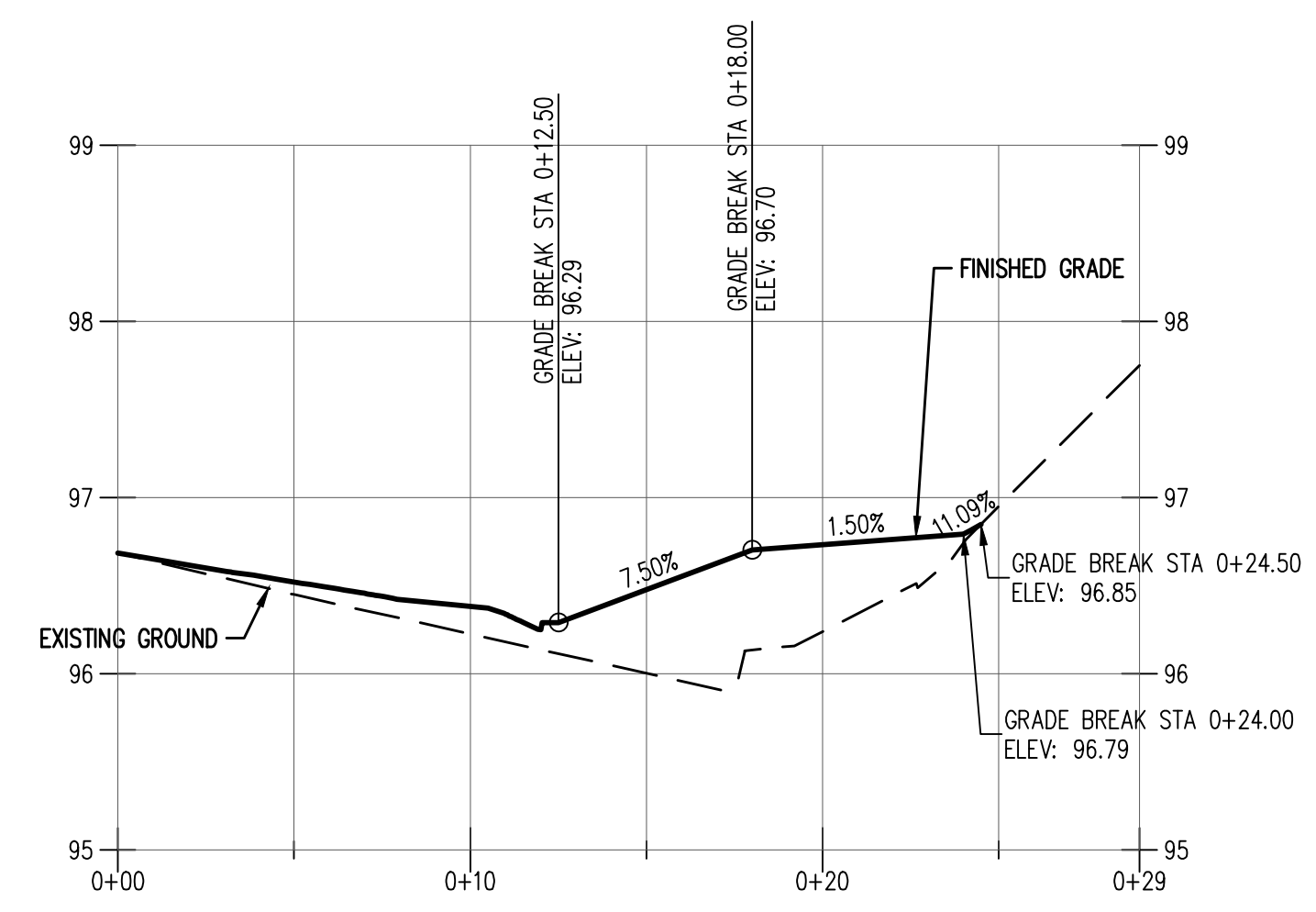
DOWNWARD SLOPE X.X%

GENERAL NOTES:

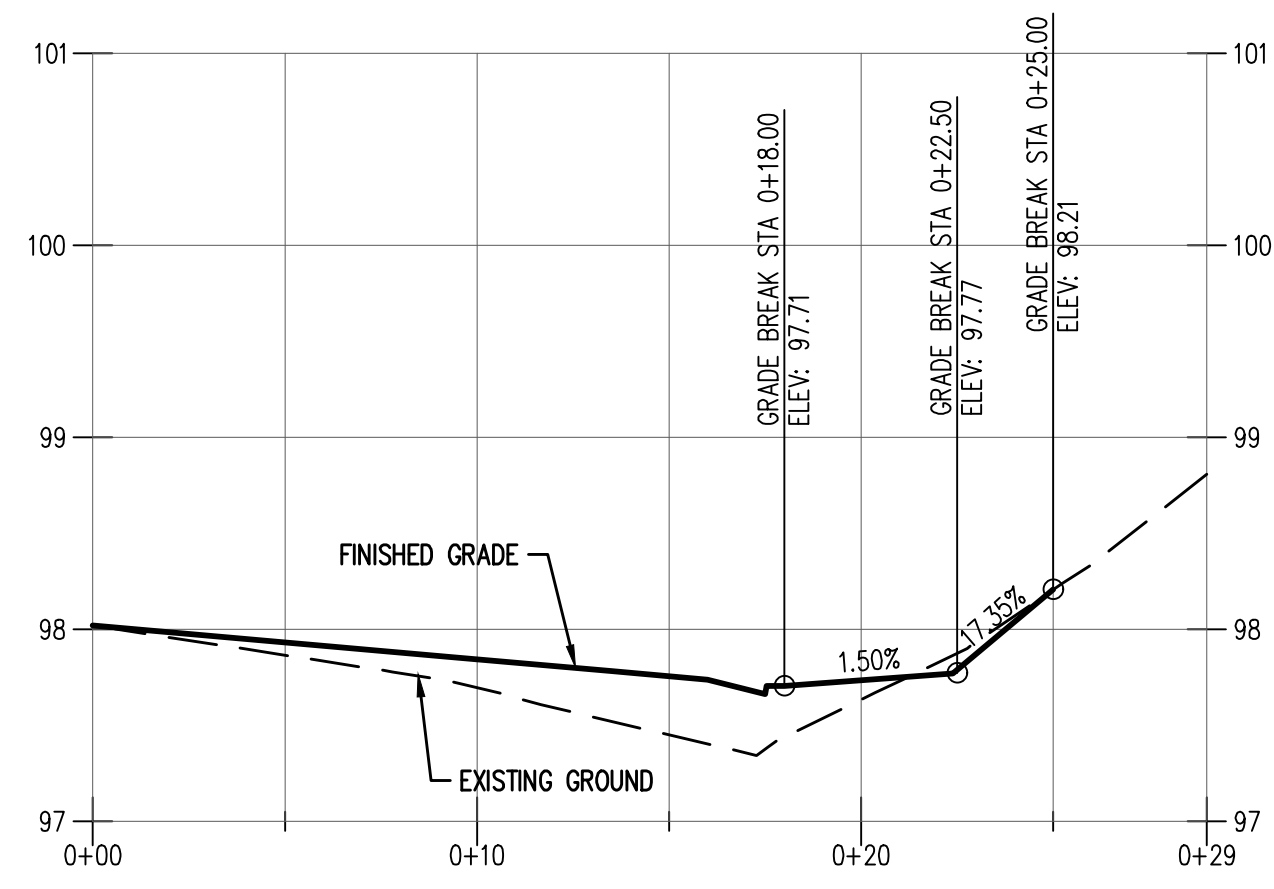
- SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
- SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
- VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
- CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

KEYED NOTES:

- INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
- INSTALL SETBACK SIDEWALK DRIVEWAY. SEE PWS DETAIL 525, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
- NOT USED.
- INSTALL STANDARD CURB AND GUTTER PER OSD RD700, SHEET C181.
- INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
- INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
- INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.



DRWY 9
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'

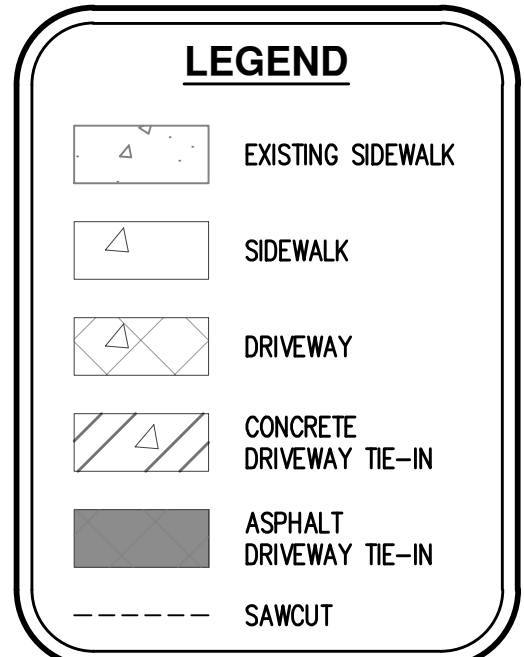
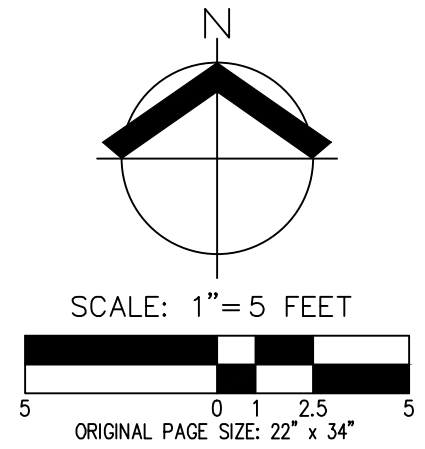
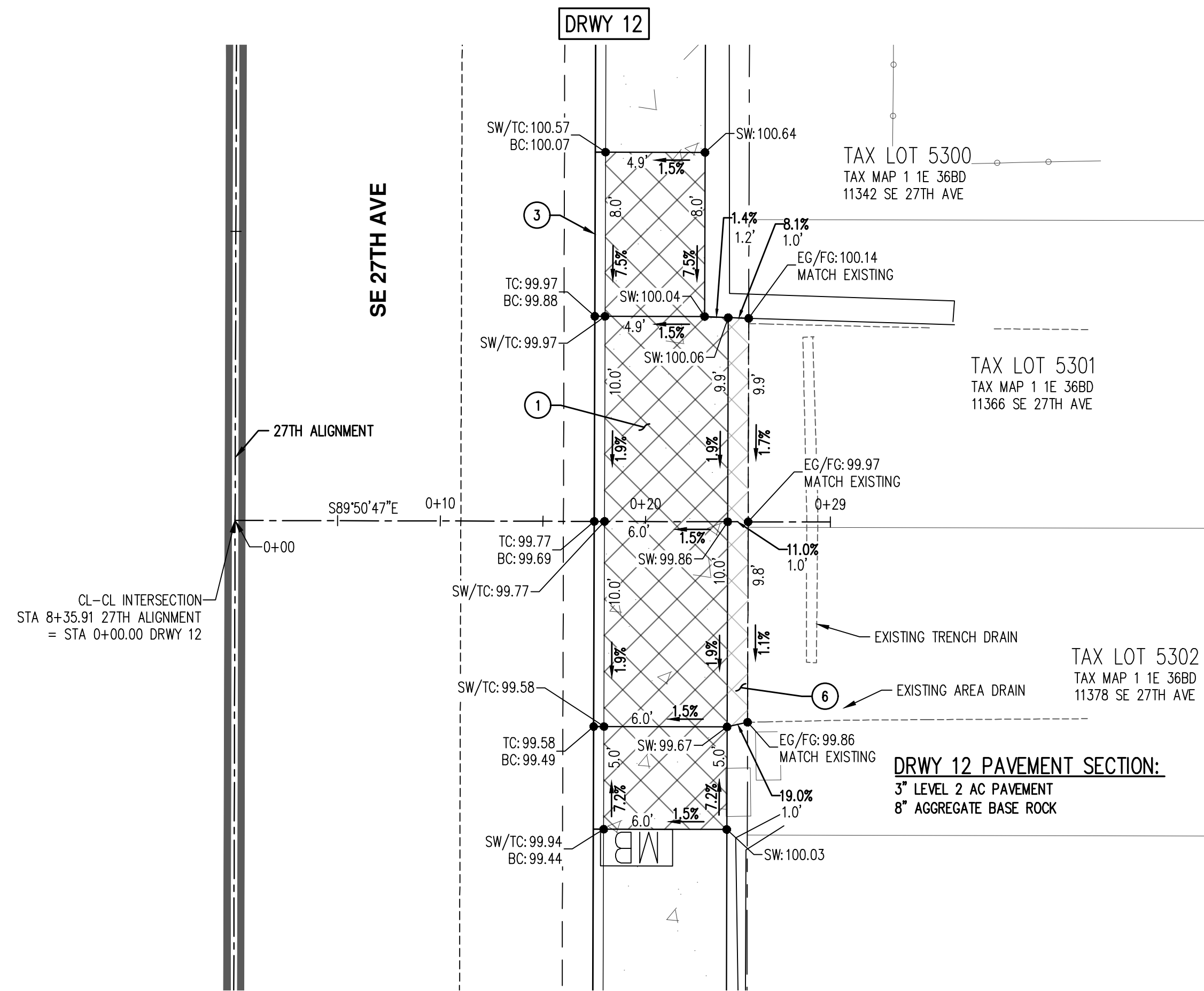


DRWY 10
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'

AKS DRAWING FILE: 8870 C170 DRWY 9 10 11 12.DWG | LAYOUT: C174



AKS DRAWING FILE: 8870_C170_DRWY 9_10_11_12.DWG | LAYOUT: C175



ABBREVIATIONS

TC = TOP OF CURB ELEVATION
BC = BOTTOM OF CURB ELEVATION
SW = SIDEWALK ELEVATION
EG = EXISTING GROUND ELEVATION
FG = FINISHED GRADE ELEVATION

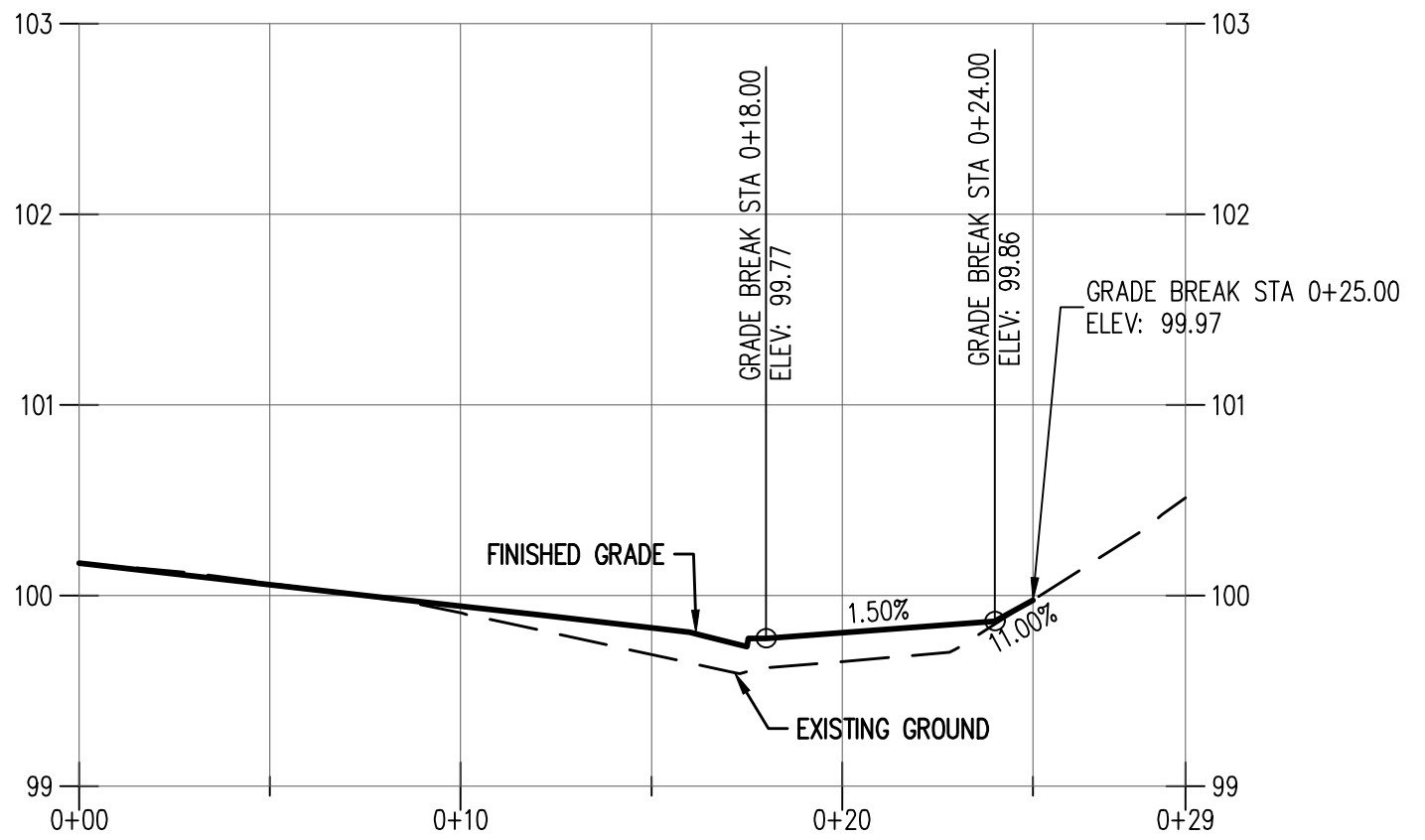
DOWNWARD SLOPE X.X%

GENERAL NOTES:

- SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
- SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
- VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
- CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO TIE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

KEYED NOTES:

- INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
- INSTALL SETBACK SIDEWALK DRIVEWAY. SEE PWS DETAIL 525, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
- NOT USED.
- INSTALL STANDARD CURB AND GUTTER PER OSD RD700, SHEET C181.
- INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
- INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
- INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFIL AND PAVEMENT SECTION.



AKS
AKS ENGINEERING & FORESTRY, LLC
12065 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
AREA IMPROVEMENTS**

OREGON

MILWAUKIE
CLACKAMAS COUNTY

DRIVEWAY DETAILS

DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC
DATE: 06/07/2024

REGISTERED PROFESSIONAL
ENGINEER
76382PE

OREGON
JUNE 29, 2009
JOHN P. CHRISTIANSEN

RENEWAL DATE: 12/31/25

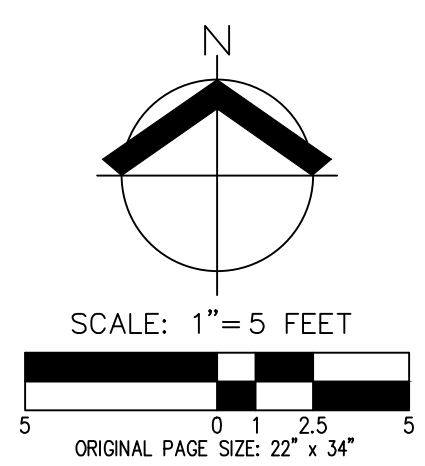
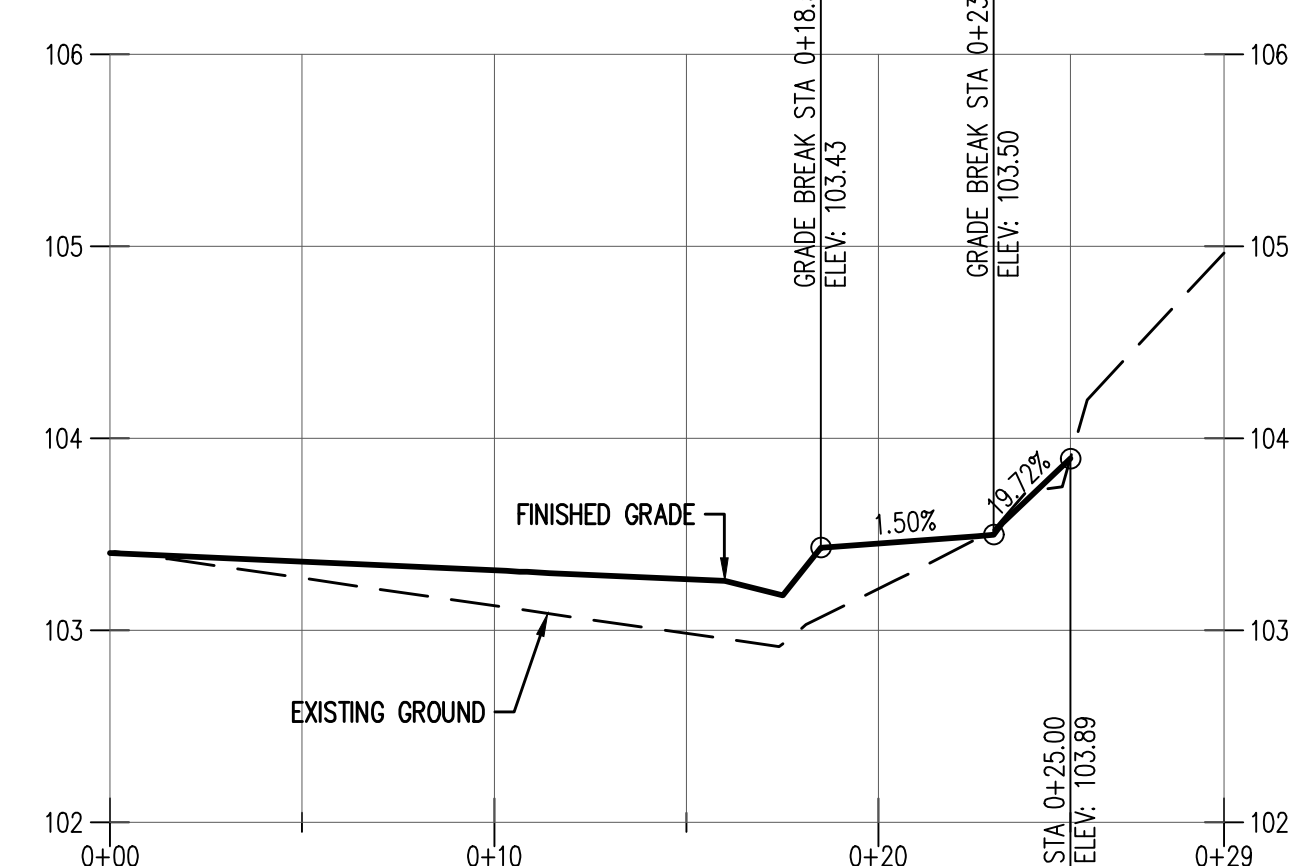
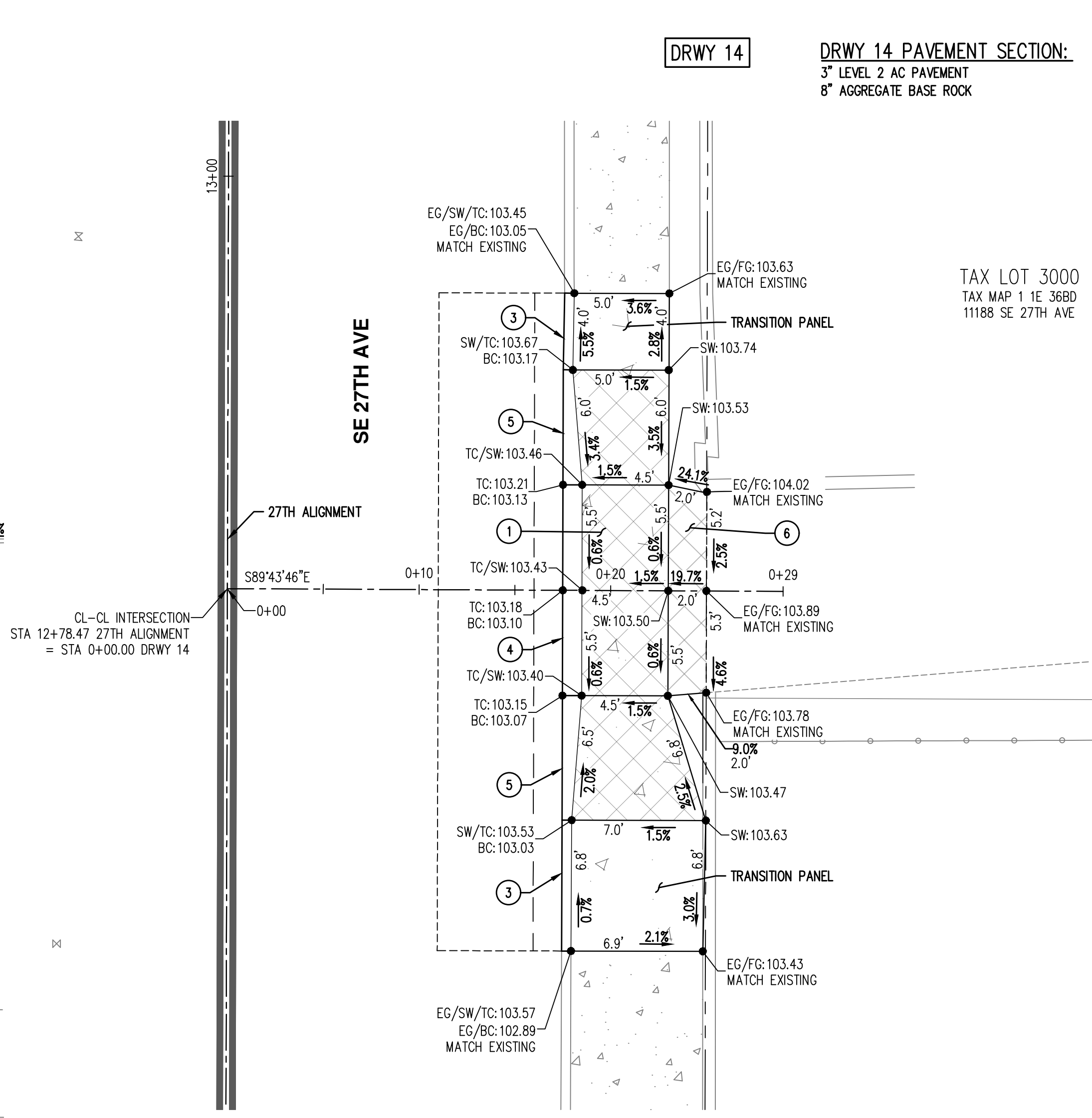
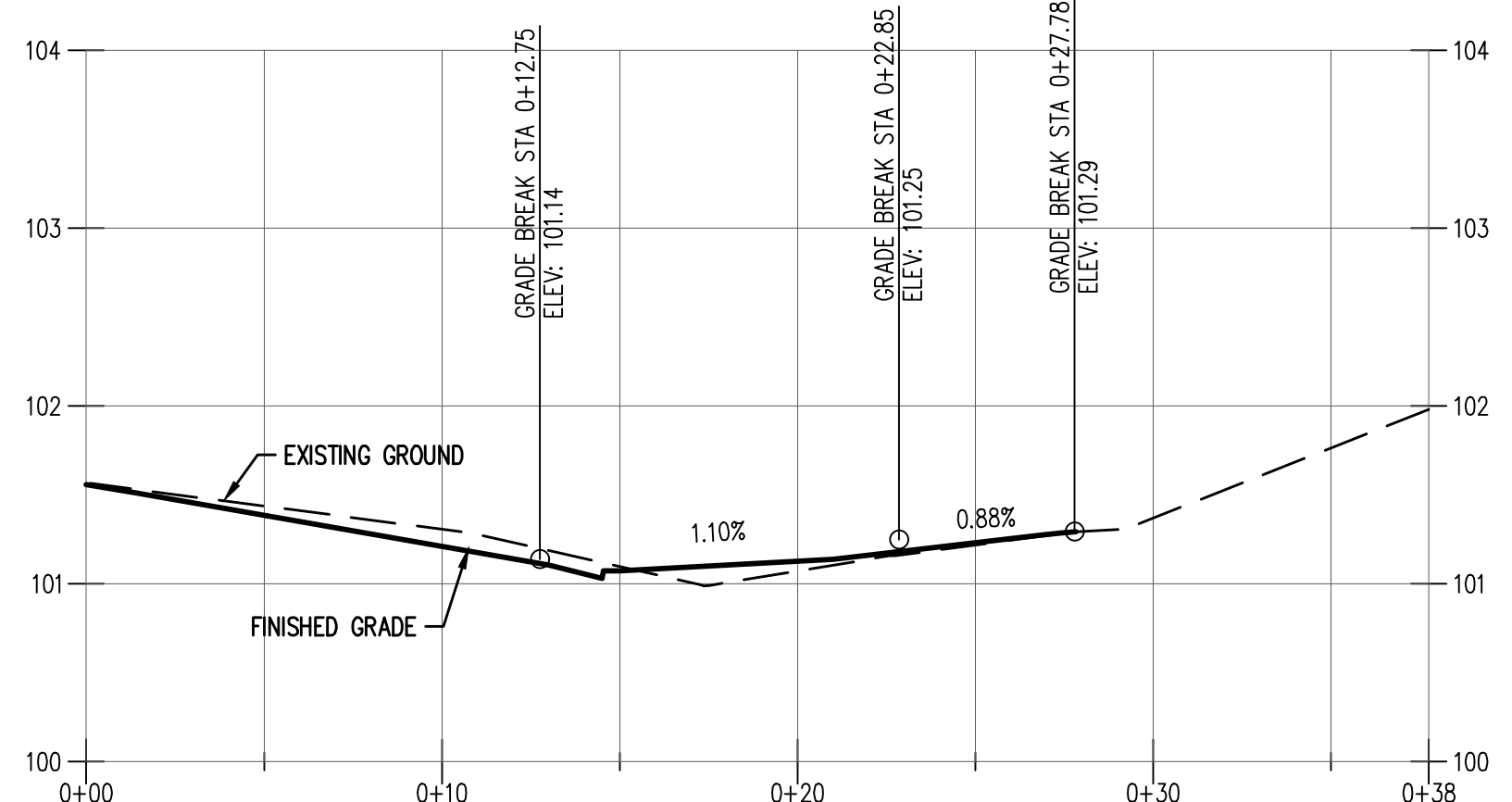
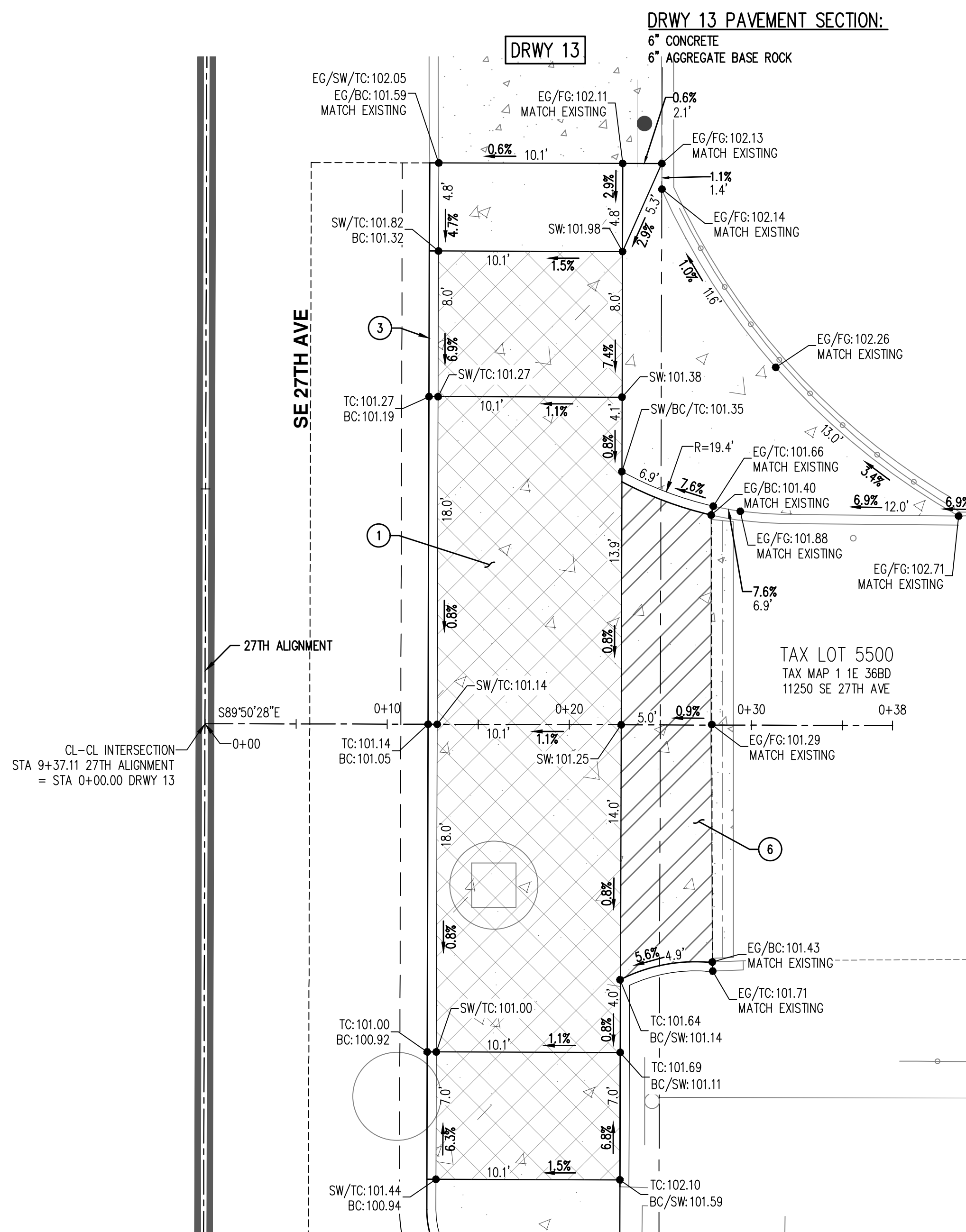
REVISIONS

JOB NUMBER
8970

SHEET
C175



AKS DRAWING FILE: 8870 C170 DRWY 13 14 15.DWG | LAYOUT: C176



LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DRIVEWAY
- CONCRETE DRIVEWAY TIE-IN
- ASPHALT DRIVEWAY TIE-IN
- SAWCUT

ABBREVIATIONS

TC = TOP OF CURB ELEVATION
BC = BOTTOM OF CURB ELEVATION
SW = SIDEWALK ELEVATION
EG = EXISTING GROUND ELEVATION
FG = FINISHED GRADE ELEVATION

DOWNWARD SLOPE X.X%

GENERAL NOTES:

- SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
- SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
- REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
- VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
- CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

KEYED NOTES:

- INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
- NOT USED.
- INSTALL STANDARD CURB AND GUTTER PER OSD RD700, SHEET C181.
- INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
- INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
- INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.

AKS
AKS ENGINEERING & FORESTRY, LLC
12065 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

**WASHINGTON STREET
AREA IMPROVEMENTS
MILWAUKIE OREGON**

DRIVEWAY DETAILS

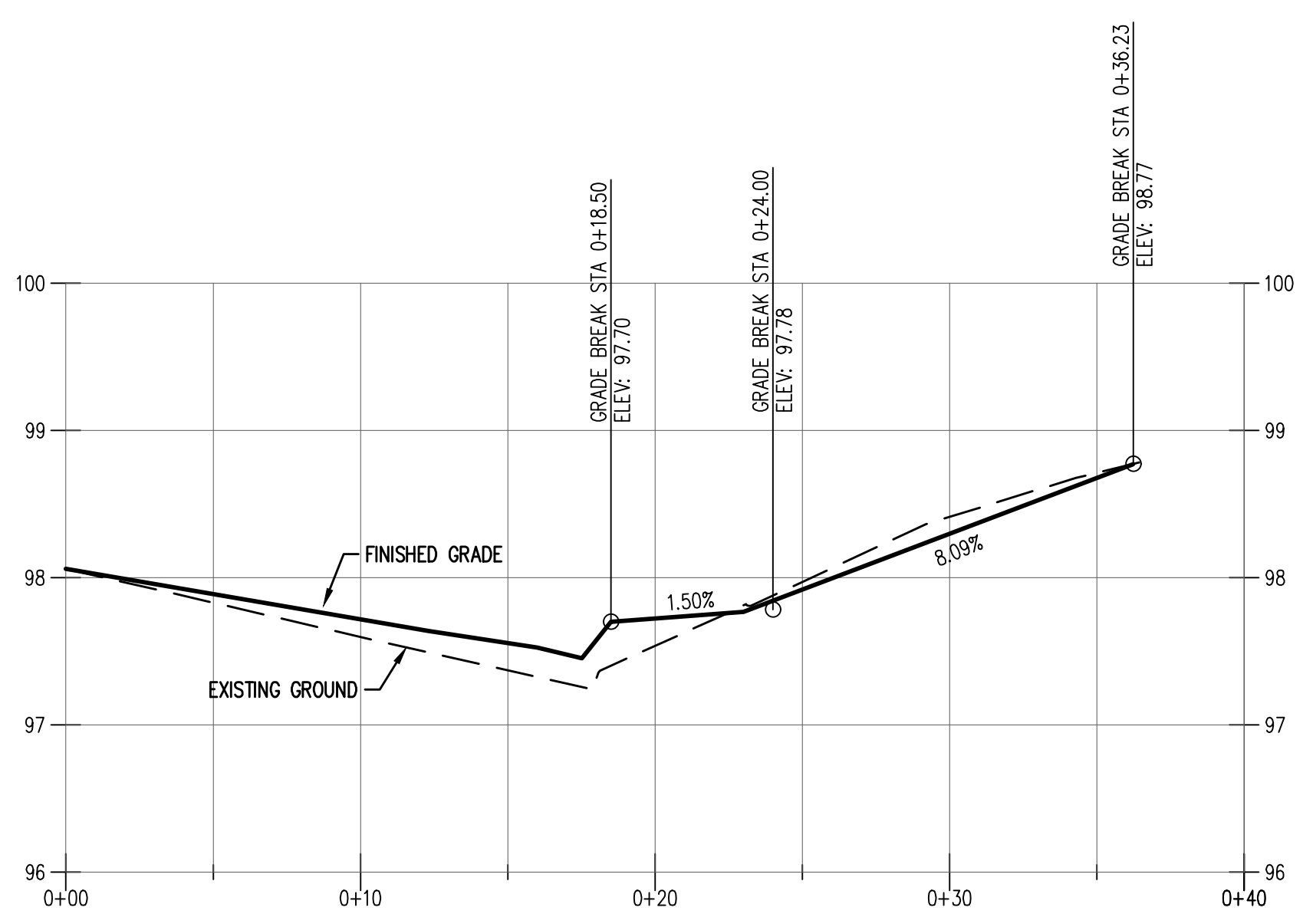
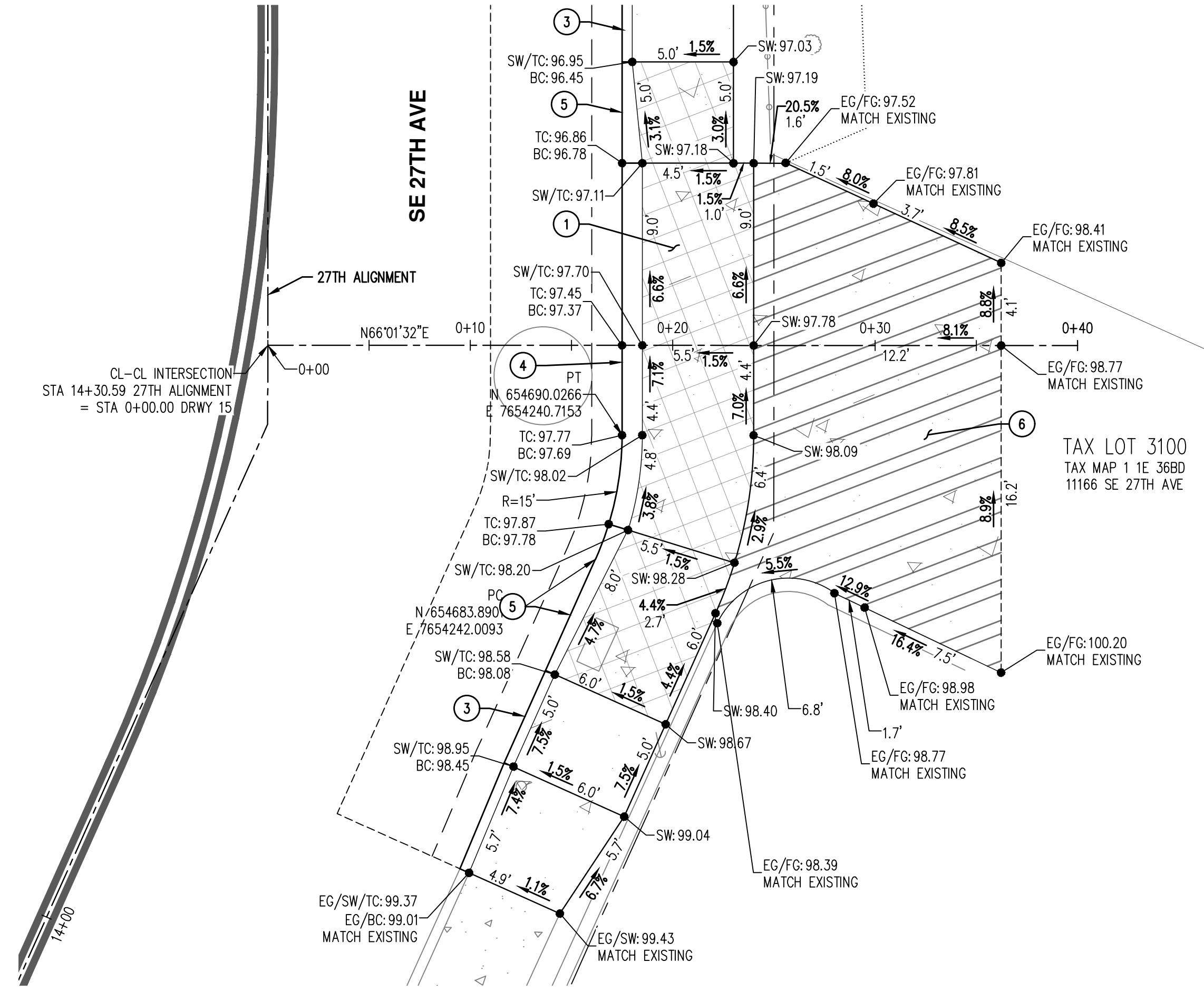
DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC
DATE: 06/07/2024

REGISTERED PROFESSIONAL ENGINEER
76382PE
ORREGON
JOHN P. CHRISTIANSEN
JUNE 29, 2009
RENEWAL DATE: 12/31/25

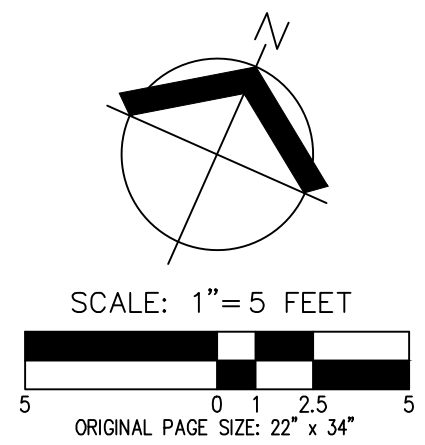
JOB NUMBER
8970
SHEET
C176



DRWY 15 PAVEMENT SECTION:
 6" CONCRETE
 6" AGGREGATE BASE ROCK



DRWY 15
 HORZ. SCALE: 1" = 5'
 VERT. SCALE: 1" = 1'



LEGEND

- EXISTING SIDEWALK
- SIDEWALK
- DRIVEWAY
- CONCRETE DRIVEWAY TIE-IN
- ASPHALT DRIVEWAY TIE-IN
- SAWCUT

ABBREVIATIONS

TC = TOP OF CURB ELEVATION
 BC = BOTTOM OF CURB ELEVATION
 SW = SIDEWALK ELEVATION
 EG = EXISTING GROUND ELEVATION
 FG = FINISHED GRADE ELEVATION

DOWNWARD SLOPE **X.X%**

GENERAL NOTES:

1. SEE GENERAL NOTES SHEET FOR A COMPLETE LIST OF GENERAL AND AGENCY SPECIFIC NOTES.
2. SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2.0% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
3. RAMP RUNNING SLOPE SHALL NOT EXCEED 8.3% AS CONSTRUCTED UNLESS OTHERWISE SPECIFIED.
4. REMOVE EXISTING SIDEWALK TO NEAREST PANEL JOINT AT MATCH POINTS.
5. VERIFY CROSS SLOPE OF EXISTING SIDEWALK AT MATCH POINTS. IF EXISTING CROSS-SLOPE AT MATCH POINT EXCEEDS 2.0%, INSTALL TRANSITION PANEL FROM NEW DRIVEWAY/SIDEWALK TO EXISTING. THE CROSS-SLOPE WARP RATE FROM NEW TO EXISTING SHALL NOT EXCEED 0.5% PER FOOT OF LENGTH. THE WARP RATE WILL DICTATE THE TRANSITION PANEL LENGTH. MINIMUM LENGTH SHALL BE 3-FT.
6. CONSTRUCT ALL SIDEWALK/DRIVEWAYS TO MEET ADA AND JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
7. CONTRACTOR TO SAWCUT EXISTING AC PAVEMENT TO PROVIDE A CLEAN SURFACE FOR DRIVEWAY APPROACH TO THE INTO. SEAL ALL AC PAVEMENT JOINTS WITH A HEAT-APPLIED RUBBERIZED SEALANT.

KEYED NOTES:

1. INSTALL CURB LINE SIDEWALK DRIVEWAY. SEE PWS DETAIL 526, SHEET C180 FOR ADDITIONAL INSTALLATION INFORMATION.
2. NOT USED.
3. INSTALL STANDARD CURB AND GUTTER PER OSD RD700, SHEET C181.
4. INSTALL LOW PROFILE MOUNTABLE CURB PER PBOT DETAIL P-540, SHEET C186.
5. INSTALL TRANSITION FROM STANDARD CURB AND GUTTER TO LOW PROFILE MOUNTABLE CURB.
6. INSTALL PRIVATE DRIVEWAY PER DRIVEWAY PROFILE AND PAVEMENT SECTION.



SECTION A-A
SECTION B-B

NOTES:

- SIDEWALK RAMPS MUST MEET ADA STANDARDS.
- ALL SURFACES TO BE LIGHTLY BROOMED. ALL EDGES TO BE TOOL ROUNDED AND SHINED 3" AFTER BROOMING.
- SAW CUT EXISTING RAMP, CURB, AND SIDEWALK THAT ARE TO BE REMOVED TO THE NEAREST JOINT.
- CONCRETE MUST BE 3300 PSI AT 28 DAYS WITH A SLUMP RANGE OF 2" TO 4".
- SIDEWALK PANELS SHOULD BE SQUARE (4'x4', 5'x5', 6'x6') IN NO CASE SHALL THE LENGTH OF A SIDEWALK PANEL BE GREATER THAN 1.5 TIMES THE WIDTH AND VICE VERSA.
- BASE ROCK TO BE 3/4"-0 OR 1"-0 CRUSHED AGGREGATE ROCK COMPACTED TO 95% MAXIMUM DENSITY OF AASHTO T-180.
- CURB JOINT FOR CURB TIGHT SIDEWALK TO BE A TROWLED JOINT WITH A 1/2" RADIUS ALONG THE BACK OF CURB.
- LANDINGS MUST BE PLACED AT THE TOP OF EACH RAMP. LANDING SLOPES NOT TO EXCEED 20:1 IN ANY DIRECTION AND WILL HAVE MINIMUM DIMENSIONS OF 5' X 5'.
- DETECTABLE WARNING PAD TO BE 24" LONG IN THE DIRECTION OF TRAVEL AND INSTALLED ALONG THE FULL WIDTH OF THE BOTTOM OF THE SIDEWALK RAMP. ADA SOLUTIONS ADA CAST-IN-PLACE REPLACEMENT TACTILE UNITS OR APPROVED EQUAL.
- SETBACK SIDEWALK RAMPS: THE MAXIMUM SLOPE MUST FIRST BE PROVIDED IN THE RAMP ADJACENT TO THE STREET. ANY ADDITIONAL ELEVATION GAIN TO BE PROVIDED IN THE SIDEWALK RAMP SLOPES.

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	REVISION NUMBER CHANGED	01/21	JPC
3	NOTES CHANGED	01/21	JPC
4	NOTES CHANGED	01/21	JPC
5	NOTES CHANGED	01/21	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Setback Sidewalk Intersection Ramps
 DRAWING NO. 501

SECTION A-A
SECTION B-B

NOTES:

- SIDEWALK RAMPS MUST MEET ADA STANDARDS.
- ALL SURFACES TO BE LIGHTLY BROOMED. ALL EDGES TO BE TOOL ROUNDED AND SHINED 3" AFTER BROOMING.
- SAW CUT EXISTING RAMP, CURB, AND SIDEWALK THAT ARE TO BE REMOVED TO THE NEAREST JOINT.
- CONCRETE MUST BE 3300 PSI AT 28 DAYS WITH A SLUMP RANGE OF 2" TO 4".
- SIDEWALK PANELS SHOULD BE SQUARE (4'x4', 5'x5', 6'x6') IN NO CASE SHALL THE LENGTH OF A SIDEWALK PANEL BE GREATER THAN 1.5 TIMES THE WIDTH AND VICE VERSA.
- BASE ROCK TO BE 3/4"-0 OR 1"-0 CRUSHED AGGREGATE ROCK COMPACTED TO 95% MAXIMUM DENSITY OF AASHTO T-180.
- CURB JOINT FOR CURB TIGHT SIDEWALK TO BE A TROWLED JOINT WITH A 1/2" RADIUS ALONG THE BACK OF CURB.
- LANDINGS MUST BE PLACED AT THE TOP OF EACH RAMP. LANDING SLOPES NOT TO EXCEED 20:1 IN ANY DIRECTION AND WILL HAVE MINIMUM DIMENSIONS OF 5' X 5'.
- DETECTABLE WARNING PAD TO BE 24" LONG IN THE DIRECTION OF TRAVEL AND INSTALLED ALONG THE FULL WIDTH OF THE BOTTOM OF THE SIDEWALK RAMP. ADA SOLUTIONS ADA CAST-IN-PLACE REPLACEMENT TACTILE UNITS OR APPROVED EQUAL.
- SETBACK SIDEWALK RAMPS: THE MAXIMUM SLOPE MUST FIRST BE PROVIDED IN THE RAMP ADJACENT TO THE STREET. ANY ADDITIONAL ELEVATION GAIN TO BE PROVIDED IN THE SIDEWALK RAMP SLOPES.

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	REVISION NUMBER CHANGED	01/21	JPC
3	NOTES CHANGED	01/21	JPC
4	NOTES CHANGED	01/21	JPC
5	NOTES CHANGED	01/21	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Mid-Block Curb Extension
 DRAWING NO. 502

TRENCH WITHIN PAVED AREAS
TRENCH OUTSIDE OF PAVED AREAS

ASPHALT REPLACEMENT DEPTH

CLASSIFICATION	DEPTH (IN.) WHICH EVER IS GREATER
ARTERIAL/INDUSTRIAL	8 OR EXISTING
COLLECTOR	6 OR EXISTING
LOCAL	4 OR EXISTING

NOTES:

- ADDITIONAL REPAIR IS REQUIRED FOR STREETS PAVED WITHIN THE LAST 5 YEARS. SEE STANDARD DETAIL NO. 511.
- FINAL SAWCUTS MUST BE 6" WIDER THAN THE WIDTH OF THE ROLLER USED FOR COMPACTION.
- PAVING TO CONSIST OF LEVEL 3 ASPHALT CONCRETE AND BE PLACED IN LIFTS. EACH LIFT MUST HAVE A MAXIMUM DEPTH OF 3" & MINIMUM DEPTH OF 2".
- INFRARED ASPHALT REPAIRS MAY BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER.
- UNDERMINED, BROKEN OR CRACKED PAVEMENT EDGES MUST BE SAWCUT AND REMOVED AT THE DISCRETION OF THE CITY ENGINEER.
- CONTROL DENSITY FILL (CDF) MAY BE REQUIRED AT CITY ENGINEER'S DISCRETION.
- ALL ROCK AND BACKFILL TO BE COMPACTED TO 95% MAX. DENSITY AASHTO T-180.

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	ADDED T-180 LANGUAGE	02/24	JAW
3	DRAWING NUMBER CHANGED	12/16	JPC
4	UPDATED NOTES, DRAWING NUMBER CHANGE	06/19	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Trench Patch
 DRAWING NO. 510

ELEVATION TYPICAL ORNAMENTAL PANEL
SECTION A-A

NOTES:

- SLOPE OF PANELS MAY VARY. PROVIDE 3/8" LONG FINE BEVEL GROOVE WELDS @ 2'-0" EACH WAY TO 1" SQUARE TUBES.
- PROVIDE MINIMUM OF 2 WELDS IN MESH BELOW BOTTOM C4 x 5.4.
- WIRE MESH TO BE PARALLEL WITH VERTICAL BARS. PLACE THE WELD WIRE MESH ON THE OUTSIDE FACE OF THE FENCE.
- MAXIMUM GAP BETWEEN WIRE MESH AND EDGE MEMBERS NOT TO EXCEED 1/2".
- FENCE MATERIAL, POSTS, AND BRACKETS TO BE POWDER COATED BLACK PRIOR TO FINAL INSTALLATION ON-SITE.

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	RENUMBERED DRAWING, NOTES CHANGED	06/19	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Decorative Fence
 DRAWING NO. 514

MODIFIED BY AKS

CROSS SECTION A-A
CROSS SECTION B-B

TABLE 1 - DRIVEWAY APPROACH WIDTH

CLASSIFICATION	MIN. WIDTH	MAX. WIDTH
1-2 RESIDENTIAL DWELLING UNITS	9.0'	20.0'
3 RESIDENTIAL DWELLING UNITS	16.0'	20.0'
4-7 RESIDENTIAL DWELLING UNITS	24.0'	36.0'
8 OR MORE RESIDENTIAL DWELLING UNITS	24.0'	36.0'
COMMERCIAL, OFFICES, OR INSTITUTIONAL	12.0'	36.0'
INDUSTRIAL	15.0'	45.0'

TABLE 2 - SIDEWALK WIDTH

CLASSIFICATION	SETBACK	CURB TIGHT
LOCAL STREET	5.0'	6.0'
NEIGHBORHOOD ROUTE	5.0'	6.0'
COLLECTOR ROAD	6.0' MIN	8.0'
ARTERIAL ROUTE	6.0' MIN	10.0'

NOTES:

- CONTRACTION JOINTS SHALL BE 1/8" TO 1/4" WIDE. DEPTH OF THE JOINT SHALL BE A MINIMUM OF 1/3 THE THICKNESS OF THE CONCRETE. DRIVEWAY JOINTS SHALL ALIGN WITH CURB JOINTS WHERE POSSIBLE.
- ALL SURFACES SHALL BE LIGHTLY BROOMED. ALL EDGES SHALL BE TOOL ROUNDED AND SHINED 3" AFTER BROOMING.
- SAW CUT EXISTING CURBS THAT ARE TO BE REMOVED TO THE NEAREST JOINT.
- EXISTING ASPHALT CONCRETE IN FRONT OF THE APPROACH SHALL BE SAW CUT ALONG A LINE PARALLEL TO THE CURB AT A MINIMUM DISTANCE OF 24" AWAY FROM THE FACE OF THE CURB AND REPLACED WITH HOT MIX ASPHALT CONCRETE WITH MINIMUM THICKNESS OF 4" OR MATCH EXISTING, WHICHEVER IS GREATER. USE RUBBERIZED SEALANT AT ALL ASPHALT JOINTS.
- CONCRETE SHALL BE 3300 PSI AT 28 DAYS WITH A SLUMP RANGE OF 2" TO 4".
- CURB JOINT SHALL BE A TROWLED JOINT WITH A MINIMUM 1/2" RADIUS ALONG THE BACK OF CURB.
- CONCRETE PANELS SHOULD BE SQUARE (4'x4', 5'x5', 6'x6'). IN NO CASE SHALL THE LENGTH OF A CONCRETE PANEL BE GREATER THAN 1.5 TIMES THE WIDTH AND VICE VERSA.
- COMMERCIAL, INDUSTRIAL, AND PUBLIC USE DRIVEWAY APRONS AND ADJACENT SIDEWALK REQUIRE #4 REBAR, 12" ON-CENTER IN EACH DIRECTION. THE APRON REBAR SHALL BE ADEQUATELY TIED TO THE CURB REBAR.

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	REVISION NUMBER CHANGED	01/21	JPC
3	NOTES CHANGED	01/21	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Set Back Driveway Approach
 DRAWING NO. 525

MODIFIED BY AKS

CROSS SECTION A-A
CROSS SECTION B-B

TABLE 1 - DRIVEWAY APPROACH WIDTH

CLASSIFICATION	MIN. WIDTH	MAX. WIDTH
1-2 RESIDENTIAL DWELLING UNITS	9.0'	20.0'
3 RESIDENTIAL DWELLING UNITS	16.0'	20.0'
4-7 RESIDENTIAL DWELLING UNITS	20.0'	24.0'
8 OR MORE RESIDENTIAL DWELLING UNITS	24.0'	36.0'
COMMERCIAL, OFFICES, OR INSTITUTIONAL	12.0'	36.0'
INDUSTRIAL	15.0'	45.0'

TABLE 2 - SIDEWALK WIDTH

CLASSIFICATION	SETBACK	CURB TIGHT
LOCAL STREET	5.0'	6.0'
NEIGHBORHOOD ROUTE	5.0'	6.0'
COLLECTOR ROAD	6.0' MIN	8.0'
ARTERIAL ROUTE	6.0' MIN	10.0'

NOTES:

- CONTRACTION JOINTS SHALL BE 1/8" TO 1/4" WIDE. DEPTH OF THE JOINT SHALL BE A MINIMUM OF 1/3 THE THICKNESS OF THE CONCRETE. DRIVEWAY JOINTS SHALL ALIGN WITH CURB JOINTS WHERE POSSIBLE.
- ALL SURFACES SHALL BE LIGHTLY BROOMED. ALL EDGES SHALL BE TOOL ROUNDED AND SHINED 3" AFTER BROOMING.
- SAW CUT EXISTING CURBS THAT ARE TO BE REMOVED TO THE NEAREST JOINT.
- EXISTING ASPHALT CONCRETE IN FRONT OF THE APPROACH SHALL BE SAW CUT ALONG A LINE PARALLEL TO THE CURB AT A MINIMUM DISTANCE OF 24" AWAY FROM THE FACE OF THE CURB AND REPLACED WITH HOT MIX ASPHALT CONCRETE WITH MINIMUM THICKNESS OF 4" OR MATCH EXISTING, WHICHEVER IS GREATER. USE RUBBERIZED SEALANT AT ALL ASPHALT JOINTS.
- CONCRETE SHALL BE 3300 PSI AT 28 DAYS WITH A SLUMP RANGE OF 2" TO 4".
- CURB JOINT SHALL BE A TROWLED JOINT WITH A MINIMUM 1/2" RADIUS ALONG THE BACK OF CURB.
- CONCRETE PANELS SHOULD BE SQUARE (4'x4', 5'x5', 6'x6'). IN NO CASE SHALL THE LENGTH OF A CONCRETE PANEL BE GREATER THAN 1.5 TIMES THE WIDTH AND VICE VERSA.
- COMMERCIAL, INDUSTRIAL, AND PUBLIC USE DRIVEWAY APRONS AND ADJACENT SIDEWALK REQUIRE #4 REBAR, 12" ON-CENTER IN EACH DIRECTION. THE APRON REBAR SHALL BE ADEQUATELY TIED TO THE CURB REBAR.

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	REVISION NUMBER CHANGED	01/21	JPC
3	NOTES CHANGED	01/21	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Curb Tight Driveway Approach
 DRAWING NO. 526

SECTION A-A
SECTION B-B

NOTES:

- BASE PLATE = 6" x 6" x 1/4" W/ 4 HOLES AT 4" O.C. EACH WAY.
- MIN. SIDEWALK WIDTH = 5'-9" MIN. 3" CLEAR - BASE PLATE TO EDGE OF CONCRETE ANCHOR EDGE DISTANCE = 4"
- ANCHORS - HILTI KWIK BOLT II - 1/2" x 4 1/2" - 3 1/2" MIN. EMBED INSTALL UNDER "SPECIAL INSPECTION" CONDITION.

(A2) THICKENED EDGE SIDEWALK FENCE TOP MOUNT BASE PLATE DETAIL

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	REVISION NUMBER CHANGED	01/21	JPC
3	NOTES CHANGED	01/21	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Thickened Edge Sidewalk Fence
 DRAWING NO. 526

(D2) THICKENED EDGE SIDEWALK TYPICAL SECTION

NOTES:

- CONCRETE SHALL BE 3300 PSI AT 28 DAYS
- CONCRETE TO CURE A MINIMUM OF 7 DAYS PRIOR TO PLACING FINAL BASECOURSE AND PAVING.
- REINFORCING STEEL SHALL BE GRADE 60 REBAR

NO.	REVISIONS	DATE	BY
1	ISSUED	01/2021	JPC
2	REVISION NUMBER CHANGED	01/21	JPC
3	NOTES CHANGED	01/21	JPC

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.
Thickened Edge Sidewalk
 DRAWING NO. 526

CONCRETE COLLAR
 (See general note 4)

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

ADAPTOR PLATE (14 ga.)

SIZE 1 & 1 1/2 MOUNTING BRACKET (16 ga.)

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

POST MOUNTING SOCKET

DETAIL A

DETAIL B

TABLE A
V-LOC POST ANCHOR USE CHART

MAILBOX LOCATION	SINGLE SUPPORT	MULTIPLE SUPPORT
Through new or existing A.C.	2'-0" x 2'-0"	2'-0" x 2'-0"
Through new rock surfacing & subgrade	2'-0" x 2'-6"	2'-0" x 2'-6"
Through new rock surfacing & subgrade, subject to saturated soil or freeze/thaw conditions	2'-0" x 2'-6"	2'-0" x 2'-6"
Use if conditions are severe	2'-0" x 2'-6"	2'-0" x 2'-6"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Angle connections to be parallel to traffic flow for Size 2 mailbox mounted on single post.
- All holes in the tube support frame are to be predrilled by the manufacturer.
- Size 2 mailbox mounted on a multiple support requires 2 each 1/2" dia. x 1/2" 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.
- Provide concrete collar when any of the following conditions exist:
 - when required in Table A
 - when required by project plans
 - as directed by the Engineer
 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 V-loc.
- Other proprietary products available as listed in ODOT's QPL.
- For mailbox installation locations, see Std. Dwg. RD101 and project plans.
- For Newspaper Box Mounting Detail, see Std. Dwg. RD101.
- Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.
- See project plans for detail not shown.

OREGON STANDARD DRAWINGS
MAILBOX SUPPORT
 2021

Effective Date: December 1, 2022 – May 31, 2023

SECTION A-A

MAILBOX SERVICE TURNOUT

MAILBOX SERVICE TURNOUT AFTER APPROACH

MAILBOX SERVICE TURNOUT BEFORE APPROACH

NEWSPAPER BOX MOUNTING DETAIL

NEWSPAPER BOX MOUNTING BRACKET DETAIL (14 ga.)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- All holes in the tube support frame are to be predrilled by the manufacturer.
- Other proprietary products available as listed in ODOT's QPL.
- For mailbox support details, see Std. Dwg. RD100.
- For approach details, see Std. Dwg. RD715.
- Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.
- See project plans for details not shown.

OREGON STANDARD DRAWINGS
MAILBOX INSTALLATION
 2021

Effective Date: December 1, 2022 – May 31, 2023

MODIFIED BY AKS

METHOD "A"

METHOD "B"

METHOD "C"

PLAN SQUARE CUT

PLAN CIRCULAR CUT

ALTERNATE "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Cover manhole with building paper and const. asph. conc. base course and wearing course.
- Saw cut square or circular excavation around manhole 12" min. from manhole frame.
- Raise manhole cover and frame to finish grade by installing conc. manhole adjustment rings and leveling mortar, as shown.
- Backfill with early strength Portland Cement Concrete. All concrete shall be commercial grade concrete.
- Protect from traffic loading until conc. has cured to 3000 psi.
- Apply tack coat to edges of existing pavement before installing patch.
- FINISH JOINT WITH HEAT-APPLIED RUBBERIZED SEALANT
- See Std. Dwg. RD336 for manhole steps details.
- See appropriate manhole standard drawings for details not shown.
- Use epoxy for synthetic grade rings.
- See Std. Dwg. RD336 for tracer wire details.
- See Std. Dwg. RD336 for manhole covers and frames.

OREGON STANDARD DRAWINGS
MANHOLE FRAME ADJUSTMENT
 2021

Effective Date: December 1, 2022 – May 31, 2023

O.D.O.T. & City of Portland Standard "H"-16" STANDARD CURB
 (See general note 1.1)

MOUNTABLE CURB
 (See general note 1.1)

CURB AND GUTTER

MOUNTABLE CURB AND GUTTER

LOW PROFILE MOUNTABLE CURB AND GUTTER
 (Where shown on plans)

LOW PROFILE MOUNTABLE CURB
 (See general note 1.1)

MODIFICATION FOR KEYWAY
 (Where shown on plans)

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

VALLEY GUTTER

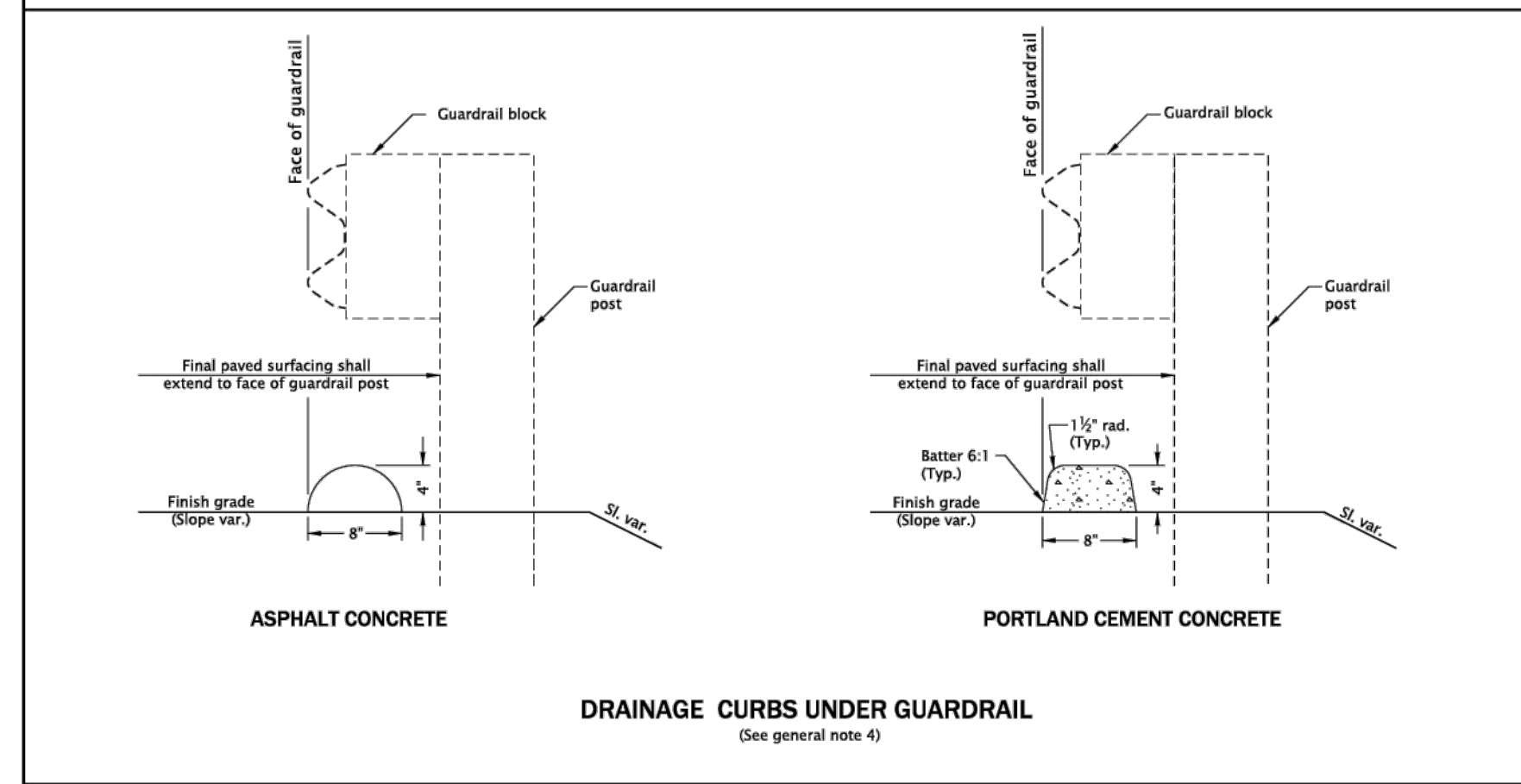
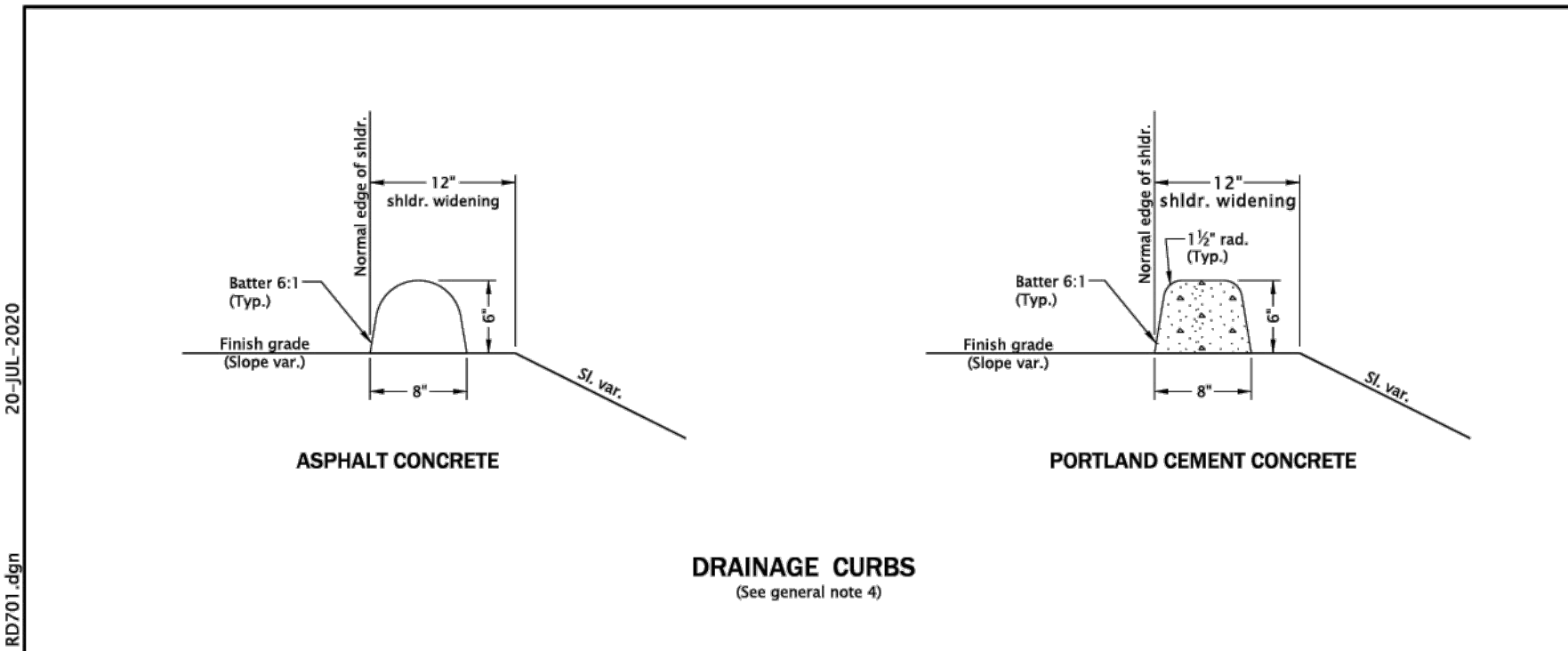
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- 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".
- Const. curb expansion joints at 20' maximum spacing, and at points of tangency, and at ends of each driveway.
- Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
- Transitions shall be used to connect curbs of different exposures "E". ("E" is the total vertical dimension of those surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
- Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
- Dimensions are nominal, vary to conform with curb machine approved by the engineer.
- Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
- For sidewalk details, and monolithic curb & sidewalk, see Std. Dwg. RD720 & RD721.
- For drainage curbs, see Std. Dwg. RD701.
- For curb ramp details, see Std. Dwg. RD900 series.
- On or along state highways, curb and gutter is required at curb ramp.

OREGON STANDARD DRAWINGS
CURBS
 2021

Effective Date: December 1, 2022 – May 31, 2023

AKS DRAWING FILE: 8970_CSD00_DETAILS.DWG | LAYOUT: C181



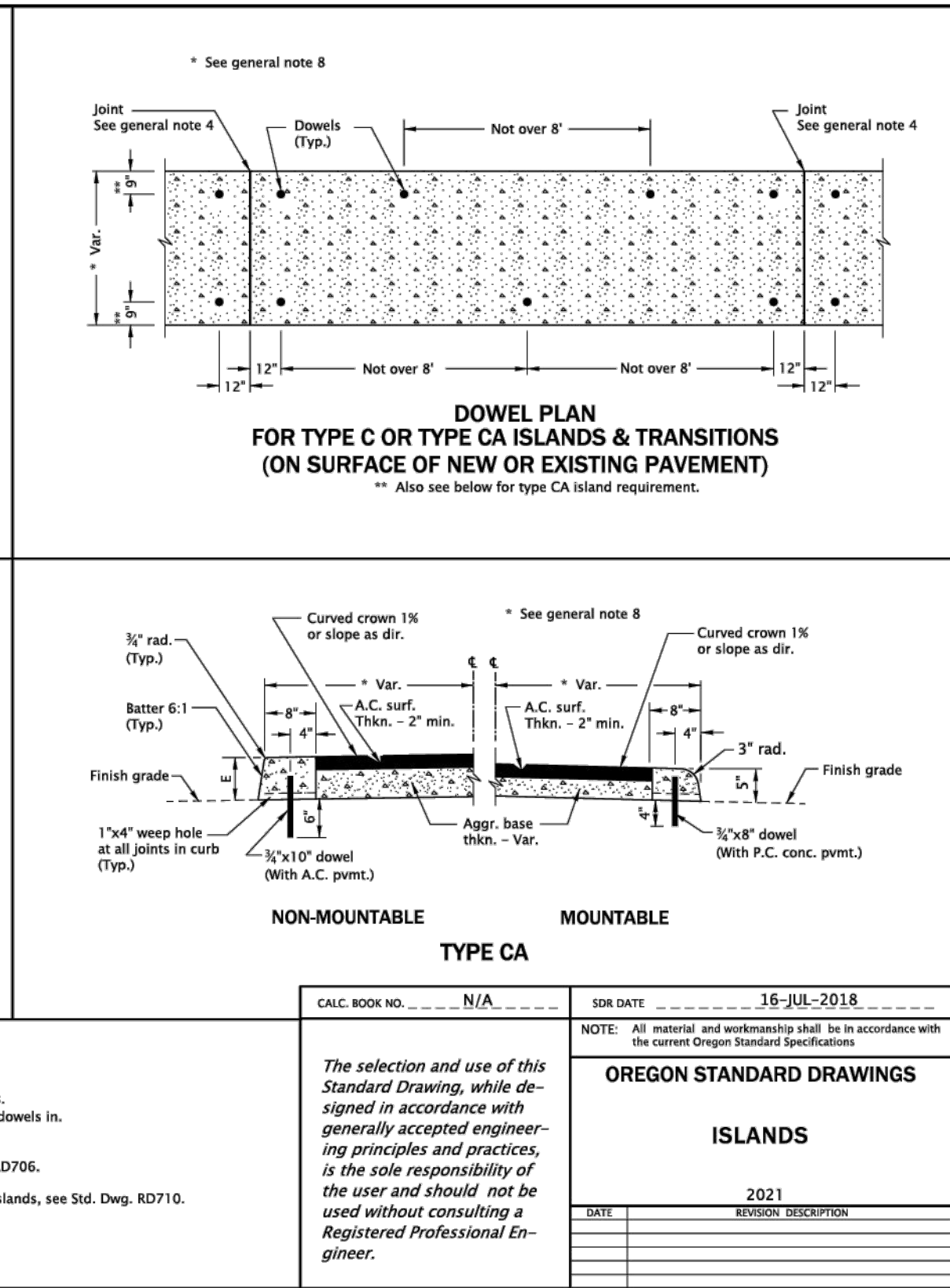
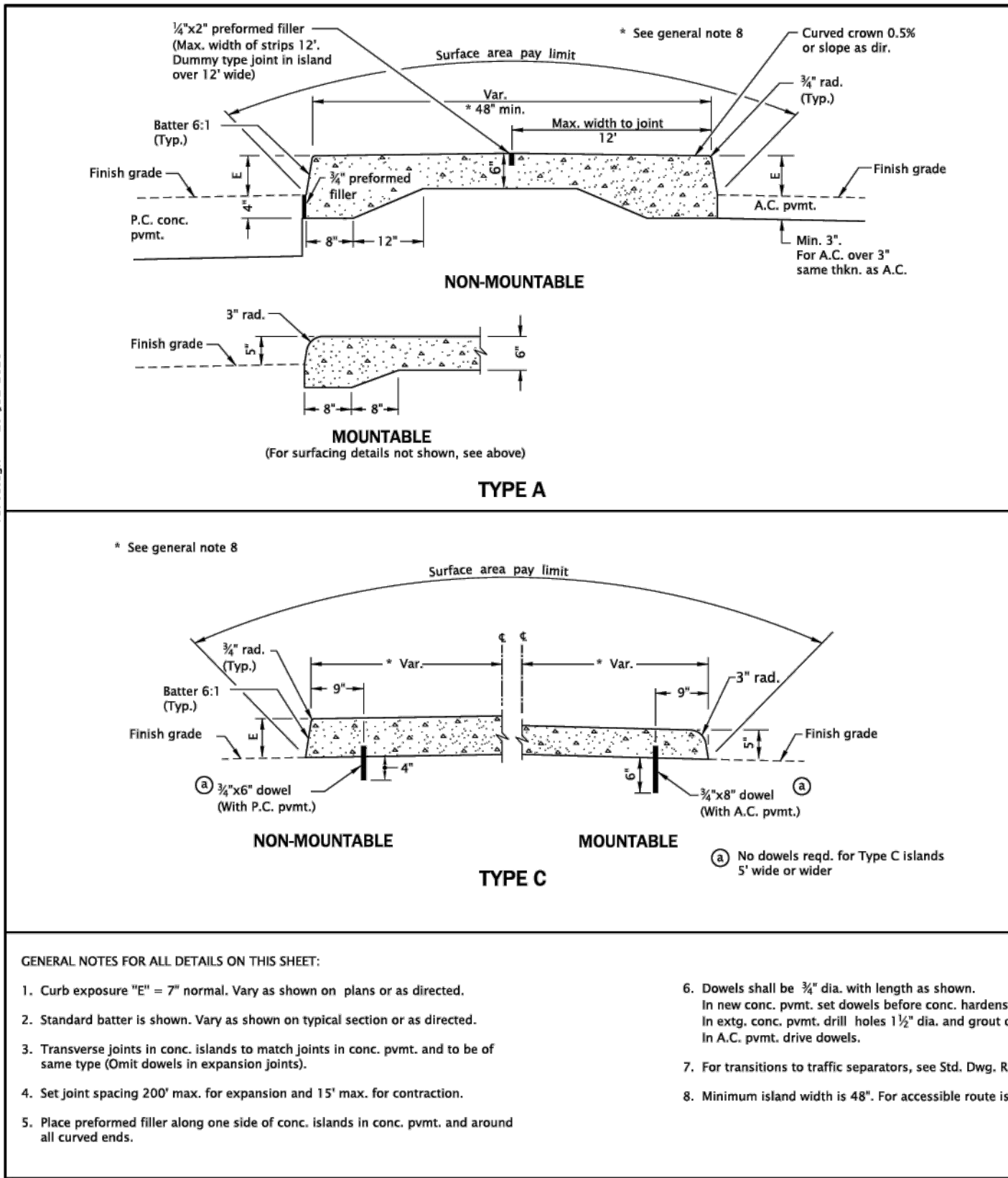
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- For PCC drainage curbs, construct curb expansion joints at 20' maximum spacing, and at points of tangency.
- For PCC drainage curbs, construct curb contraction joints at 15' maximum spacing.
- Dimensions are nominal, vary to conform with curb machine approved by the engineer.
- When bonding to dense graded ACP, apply epoxy cement between surfaces.
- When drainage curb is required, curb alignment shall be the same as face of guardrail, as shown above. When a run of drainage curb, or any part thereof, is placed under guardrail, curb height shall be 4".
- For other curb types, see Std. Dwg. RD700.
- For guardrail details not shown, see Std. Dwg. RD400.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
2021	
DATE	REVISION DESCRIPTION
CALC. BOOK NO.	N/A
SOR DATE	20-JUN-2020
	RD701

Effective Date: June 1, 2023 - November 30, 2023



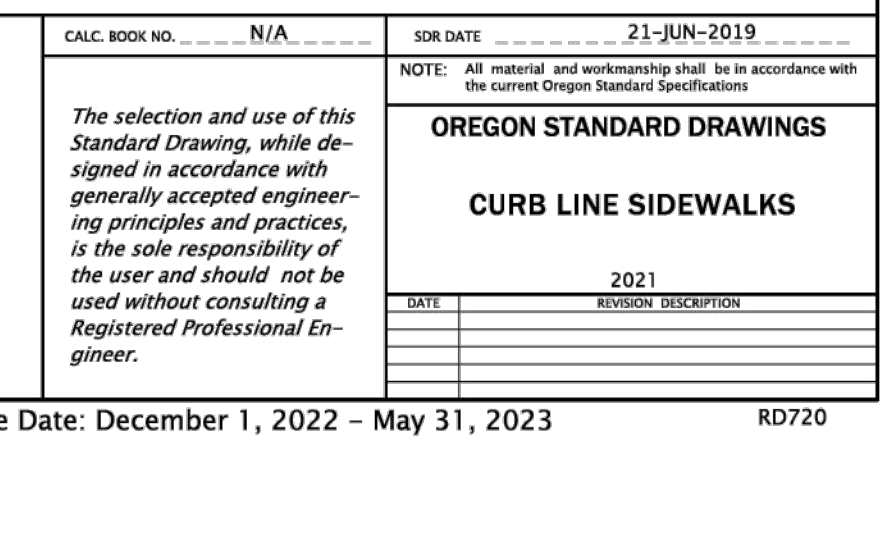
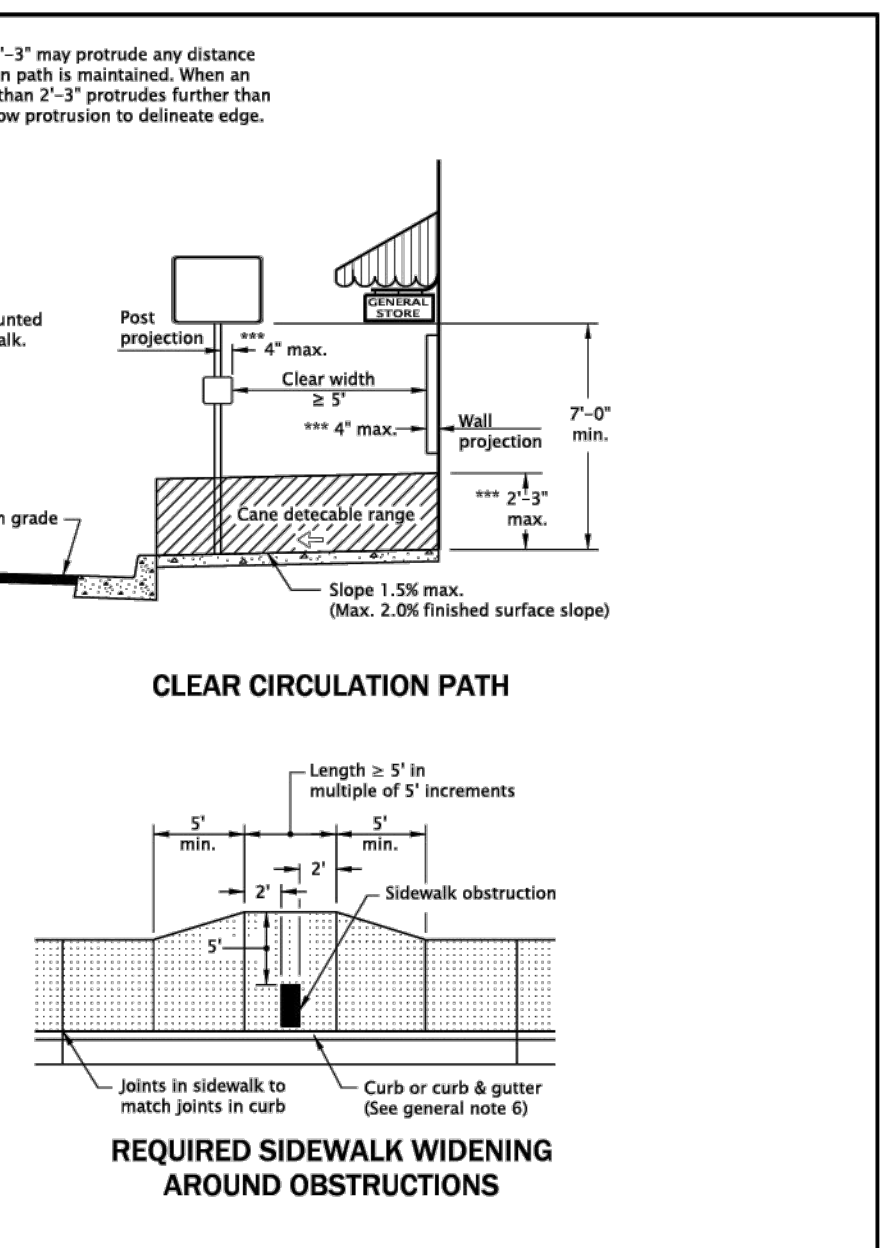
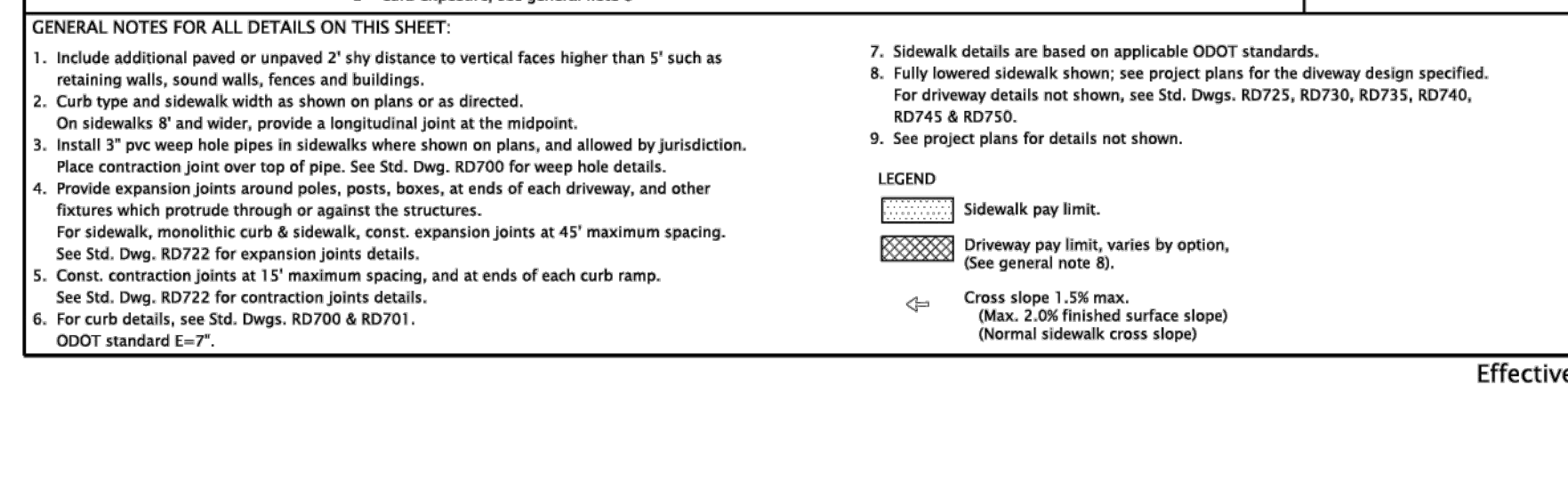
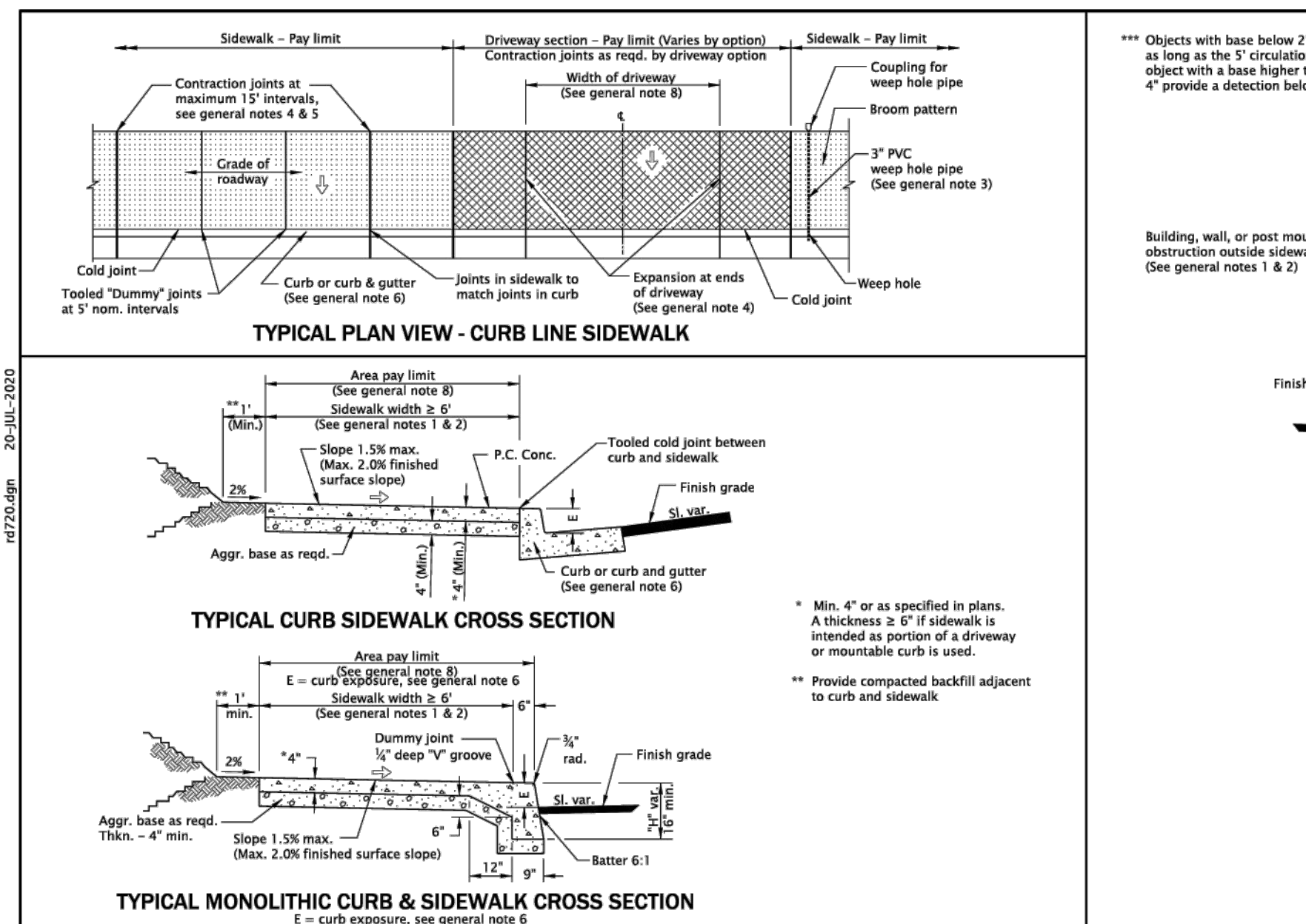
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Curb exposure "E" = 7" normal. Vary as shown on plans or as directed.
- Standard batter is shown. Vary as shown on typical section or as directed.
- Transverse joints in conc. islands to match joints in conc. pvmnt. and to be of same type (omit dowels in expansion joints).
- Set joint spacing 200' max. for expansion and 15' max. for contraction.
- Place preformed filler along one side of conc. islands in conc. pvmnt. and around all curved ends.
- Dowels shall be 1/2" dia. with length as shown. In new conc. pvmnt. set dowels before conc. hardens. In extg. conc. pvmnt. drill holes 1 1/2" dia. and grout dowels in. In A.C. pvmnt. drive dowels.
- For transitions to traffic separators, see Std. Dwg. RD706.
- Minimum island width is 48". For accessible route islands, see Std. Dwg. RD710.

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.

All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
ISLANDS	
2021	
DATE	REVISION DESCRIPTION
CALC. BOOK NO.	N/A
SOR DATE	16-JUL-2018

Effective Date: December 1, 2022 - May 31, 2023



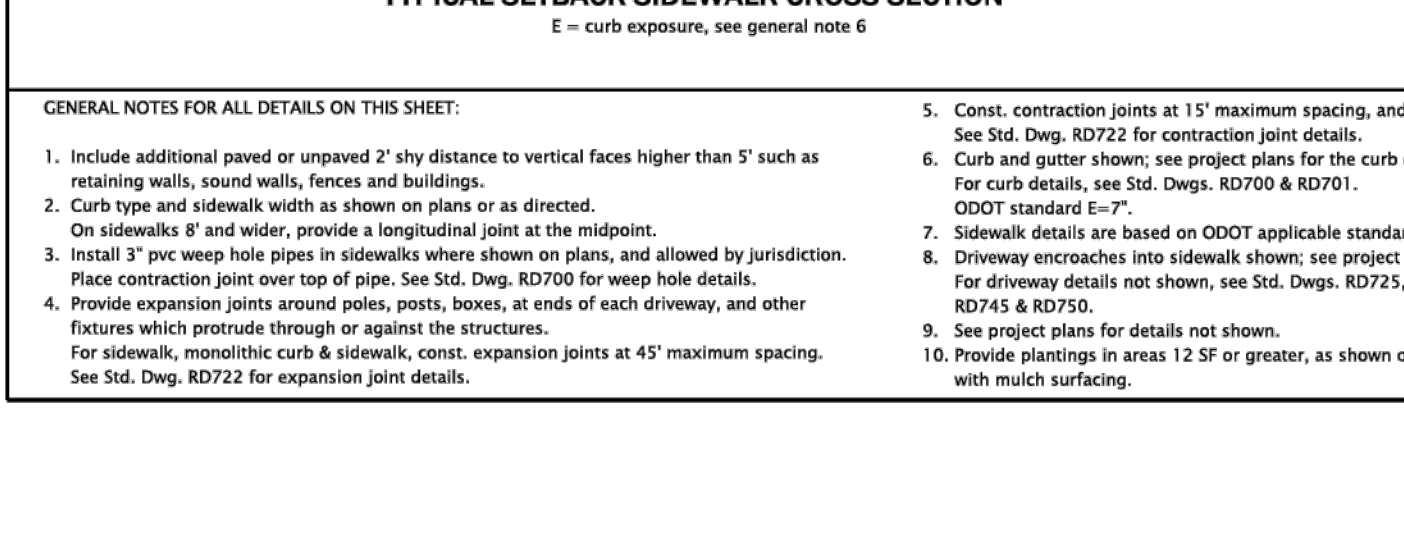
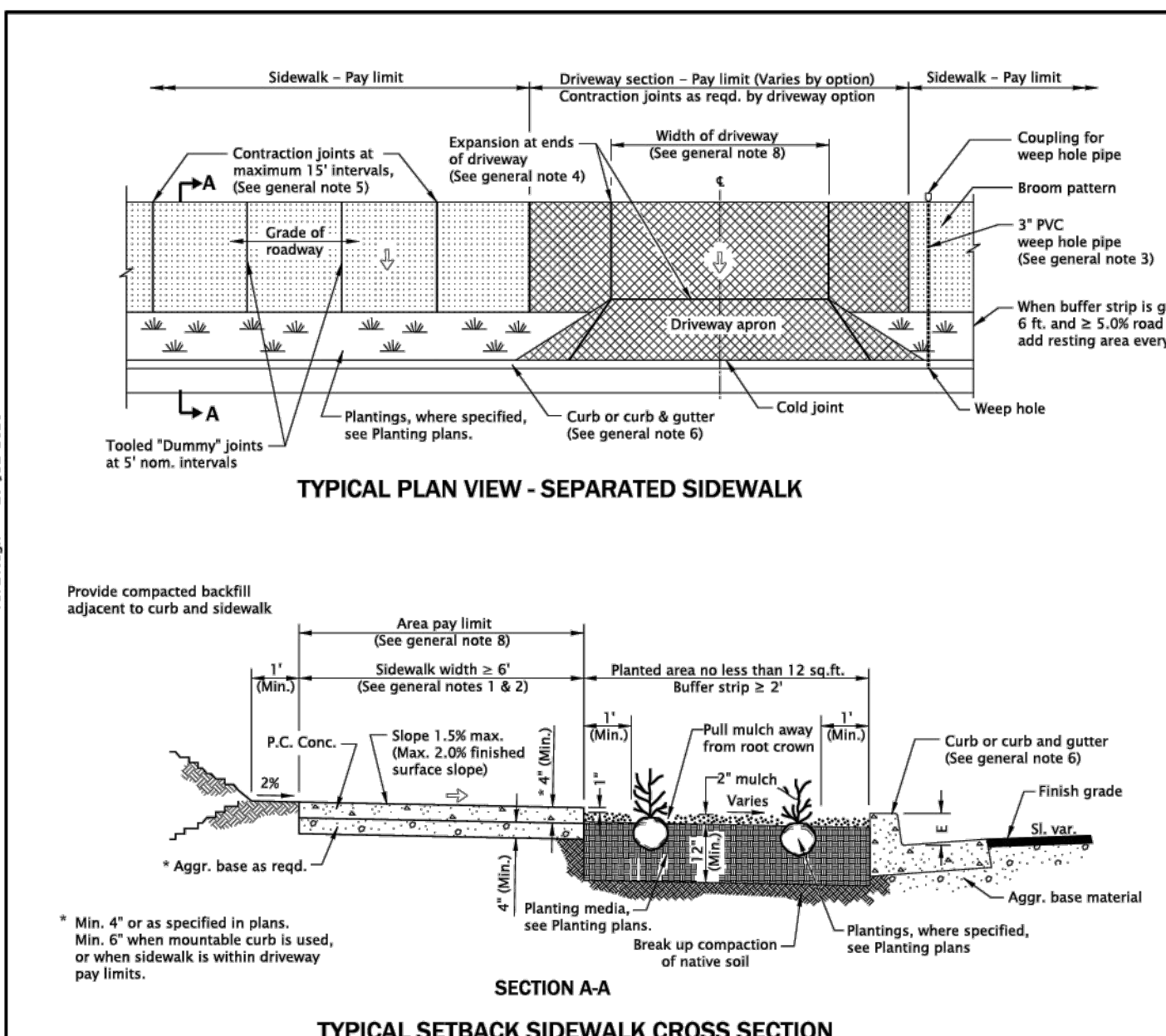
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
- Curb type and sidewalk width as shown on plans or as directed.
- On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
- Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
- Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures.
- For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joints details.
- Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joints details.
- For curb details, see Std. Dwg. RD700 & RD701.
- ODOT standard E=7".
- Slidewalk details are based on applicable ODOT standards.
- Fully lowered sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwg. RD725, RD730, RD735, RD740, RD745 & RD750.
- See project plans for details not shown.

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.

All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
CURB LINE SIDEWALKS	
2021	
DATE	REVISION DESCRIPTION
CALC. BOOK NO.	N/A
SOR DATE	21-JUN-2019

Effective Date: December 1, 2022 - May 31, 2023



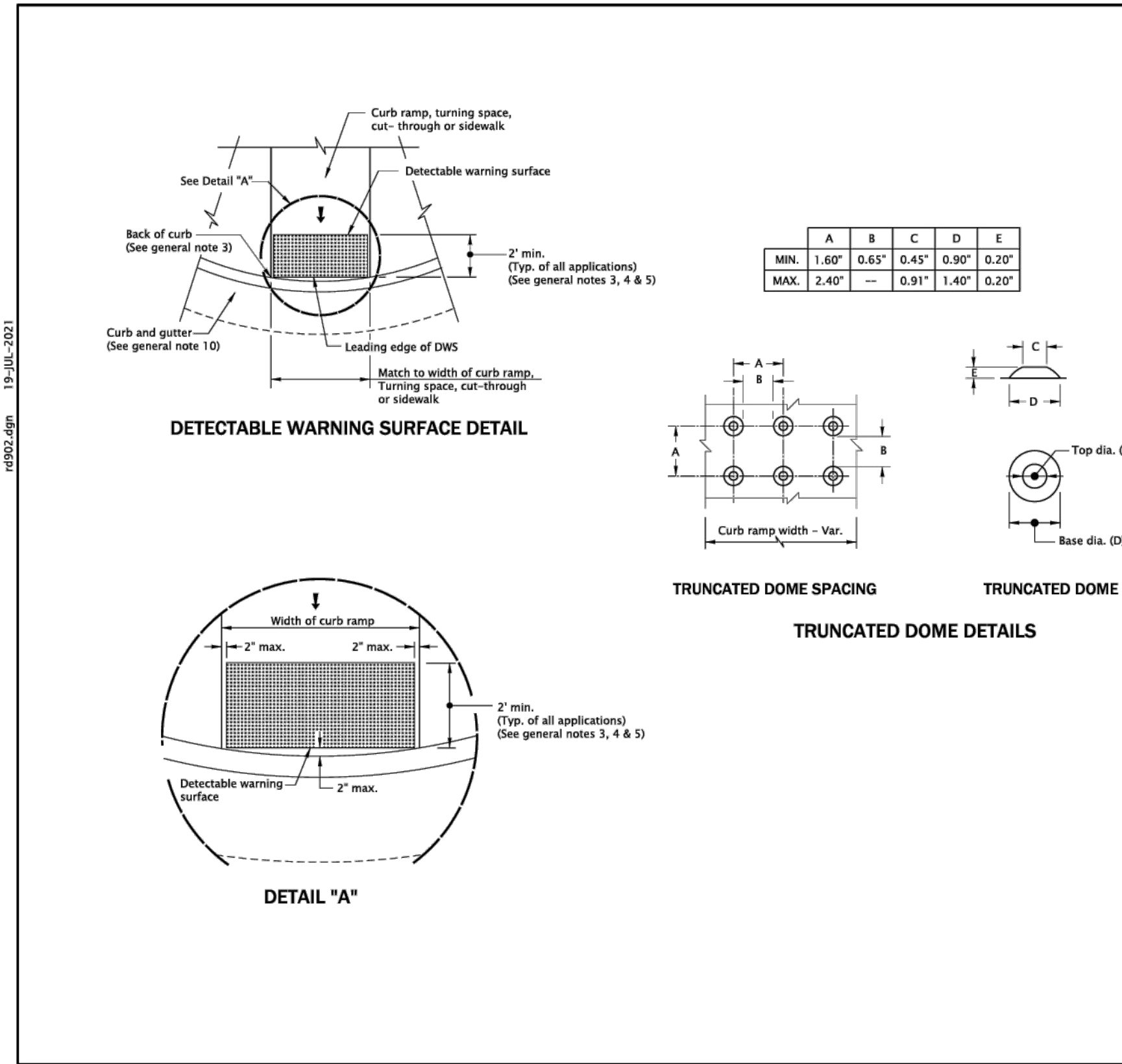
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
- Curb type and sidewalk width as shown on plans or as directed.
- On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
- Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
- Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures.
- For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joint details.
- Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joint details.
- Curb and gutter shown; see project plans for the curb design specified.
- Driveway encroaches into sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwg. RD725, RD730, RD735, RD740, RD745 & RD750.
- See project plans for details not shown.
- Provide plantings in areas 12 SF or greater, as shown or directed. Treat areas less than 12 SF with mulch surfacing.
- Sidewalk details are based on ODOT applicable standards.
- Sidewalk details are based on ODOT applicable standards.
- Driveway encroaches into sidewalk shown; see project plans for the driveway design specified. For driveway details not shown, see Std. Dwg. RD725, RD730, RD735, RD740, RD745 & RD750.
- See project plans for details not shown.
- Provide plantings in areas 12 SF or greater, as shown or directed. Treat areas less than 12 SF with mulch surfacing.

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.

All material and workmanship shall be in accordance with the current Oregon Standard Specifications.	
OREGON STANDARD DRAWINGS	
SEPARATED SIDEWALKS	
2021	
DATE	REVISION DESCRIPTION
CALC. BOOK NO.	N/A
SOR DATE	20-JUL-2020

Effective Date: December 1, 2022 - May 31, 2023



DETECTABLE WARNING SURFACE DETAIL

	A	B	C	D	E
MIN.	1.60"	0.65"	0.45"	0.90"	0.20"
MAX.	2.40"	—	0.91"	1.40"	0.20"

TRUNCATED DOME SPACING

TRUNCATED DOME DETAILS

DETAIL "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Detectable warning surface details & locations are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs.
- The detectable warning surface shall extend the full width of the curb ramp opening, shared use path, blended transition, turning space, or other roadway entrance as applicable. A gap of up to 2 inches on each side of the detectable warning surface is permitted (measured at the leading edge of the detectable warning surface panel as shown in Detail "A").
- Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. in the direction of pedestrian travel at curb ramps that are adjacent to traffic. Detectable warning surface may be radial or rectangular, but must comply with the truncated dome size and spacing standards. Detectable warning surface may be cut to meet necessary shape as shown in plans. Detectable warning surface across a grade break is prohibited. Place abutting panels within 1/2 inch of each other and install anchors, as specified by manufacturers, along cut-edge.
- Color to be safety yellow if no color specified in construction note. Alternative colors require a design exception on or along state highways.
- Detectable warning surface shall be used in the following locations:
 - Curb ramps at street crossings.
 - Crossing islands (Accessible Route Islands).
 - Rail crossings.
- Where public transportation stations (rail, bus, etc.) use platform boarding, detectable warning surface shall be placed along the full edge length of the station, when not protected by platform screens or guards, (see Std. Dwg. RD908).
- Detectable warning surface shall not be used on the following locations:
 - End of sidewalk transitions that are not at a crosswalk, (see Std. Dwg. RD950, RD952 and RD960).
 - Driveways, unless constructed with curb return or are signalized.
 - Parking lots, access aisles and passenger loading zones where curb ramp does not lead to vehicular way.
- Where no curb is present, the detectable warning surface shall be placed at the edge of the roadway.
- On or along state highways, curb and gutter is required at curb ramps.

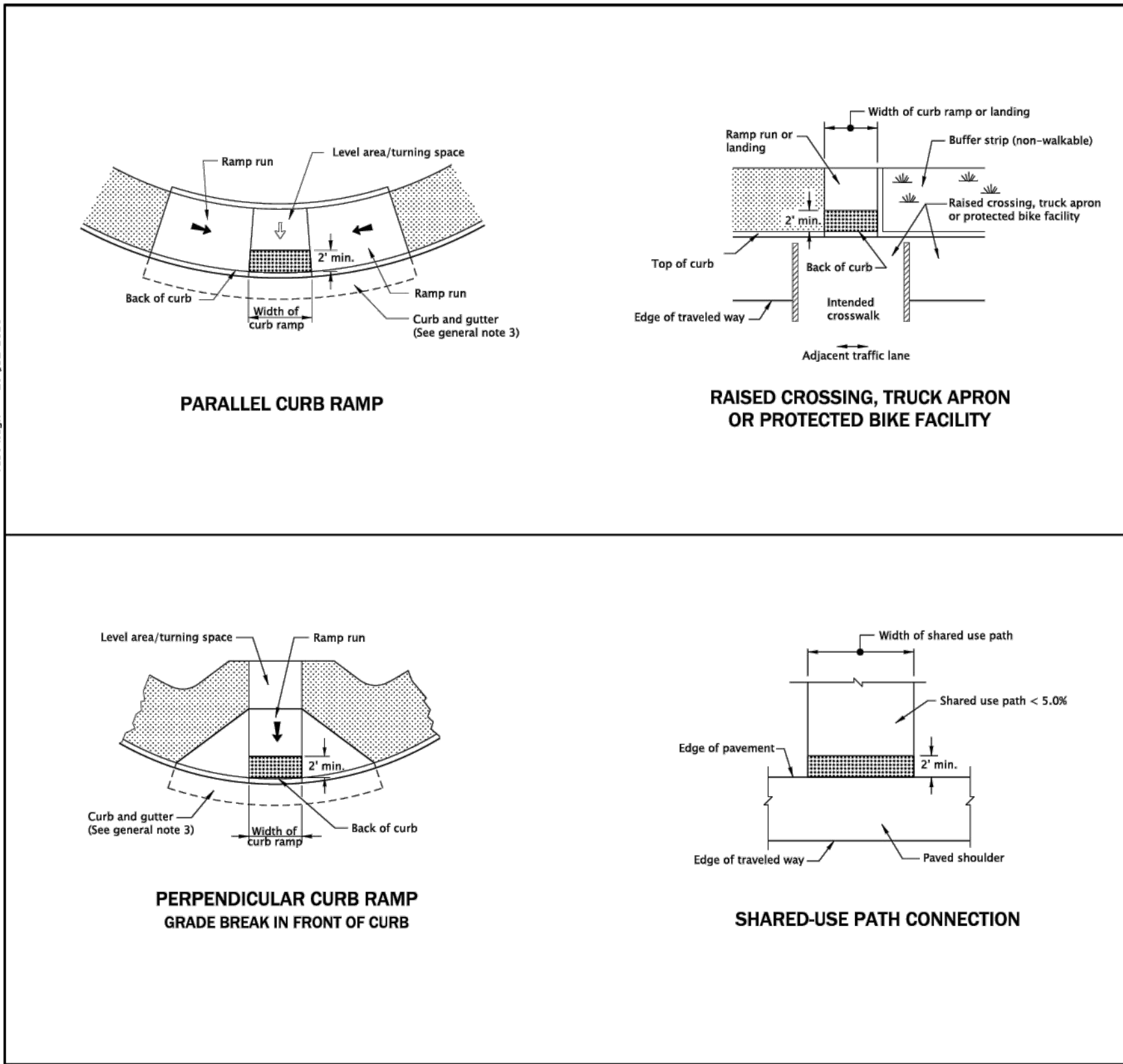
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)

OREGON STANDARD DRAWINGS
DETECTABLE WARNING SURFACE DETAILS

2021

Effective Date: December 1, 2022 – May 31, 2023



PARALLEL CURB RAMP

RAISED CROSSING, TRUCK APRON OR PROTECTED BIKE FACILITY

PERPENDICULAR CURB RAMP GRADE BREAK IN FRONT OF CURB

SHARED-USE PATH CONNECTION

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Detectable warning surface details & locations are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD902 for detectable warning surface installation details.
- On or along state highways, curb and gutter is required at curb ramps.
- Detectable warning surface placement for perpendicular ramps vary as shown.

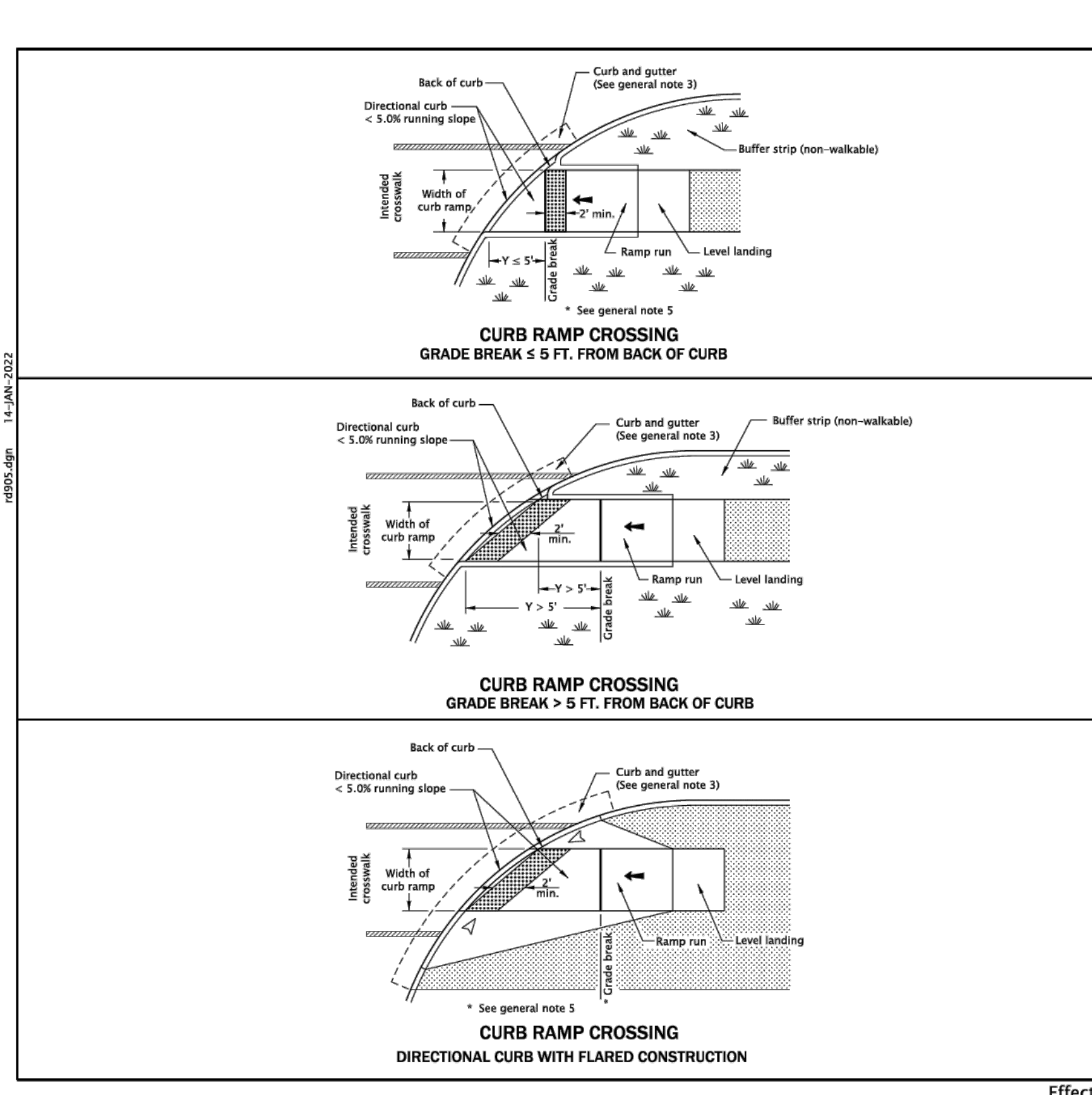
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)

OREGON STANDARD DRAWINGS
DETECTABLE WARNING SURFACE PLACEMENT FOR CURB RAMPS

2021

Effective Date: December 1, 2022 – May 31, 2023



CURB RAMP CROSSING GRADE BREAK ≤ 5 FT. FROM BACK OF CURB

CURB RAMP CROSSING GRADE BREAK > 5 FT. FROM BACK OF CURB

CURB RAMP CROSSING DIRECTIONAL CURB WITH FLARED CONSTRUCTION

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Detectable warning surface details & locations are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD902 for detectable warning surface installation details.
- On or along state highways, curb and gutter is required at curb ramps.
- Detectable warning surface placement for perpendicular ramps vary as shown.
- Detectable warning surface placement across the grade break is prohibited.

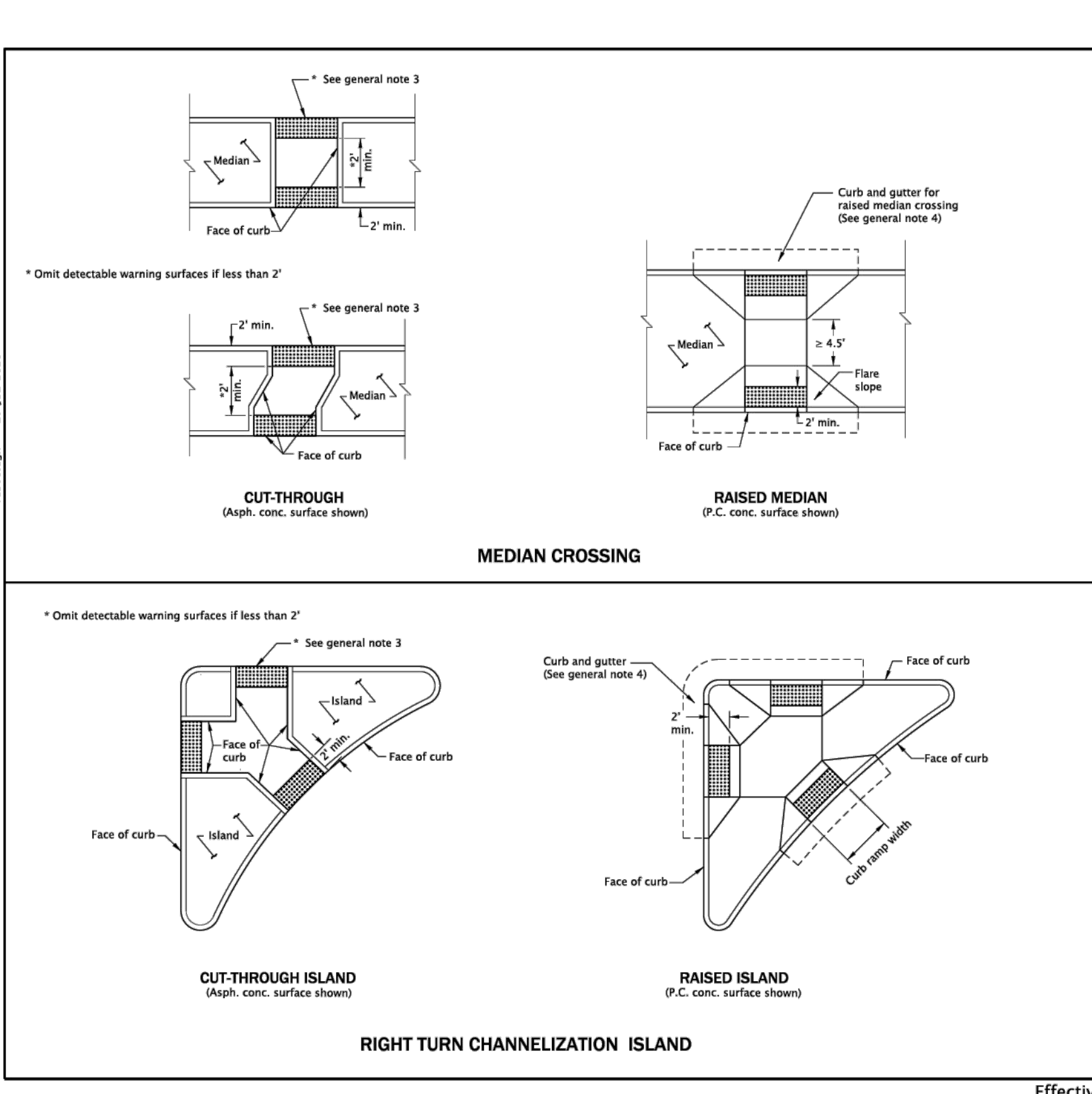
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- Flare slope (Max. 10.0% finished surface slope)

OREGON STANDARD DRAWINGS
DETECTABLE WARNING SURFACE PLACEMENT FOR DIRECTIONAL CURBS

2021

Effective Date: December 1, 2022 – May 31, 2023



CUT-THROUGH (Asph. conc. surface shown)

RAISED MEDIAN (P.C. conc. surface shown)

MEDIAN CROSSING

CUT-THROUGH ISLAND (Asph. conc. surface shown)

RAISED ISLAND (P.C. conc. surface shown)

RIGHT TURN CHANNELIZATION ISLAND

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Detectable warning surface details & locations are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD710 & RD711 for accessible route island. See Std. Dwg. RD902 for detectable warning surface installation details.
- Detectable warning surfaces shall be separated by a 2.0 ft. minimum length of walkway without detectable warnings. Where the island has no curb, the detectable warning surface shall be placed at the edge of roadway.
- On or along state highways, curb and gutter is required at curb ramps.
- Details intended for pedestrian route only. For protected bike lanes on multi-use paths, see project plans for specific details.

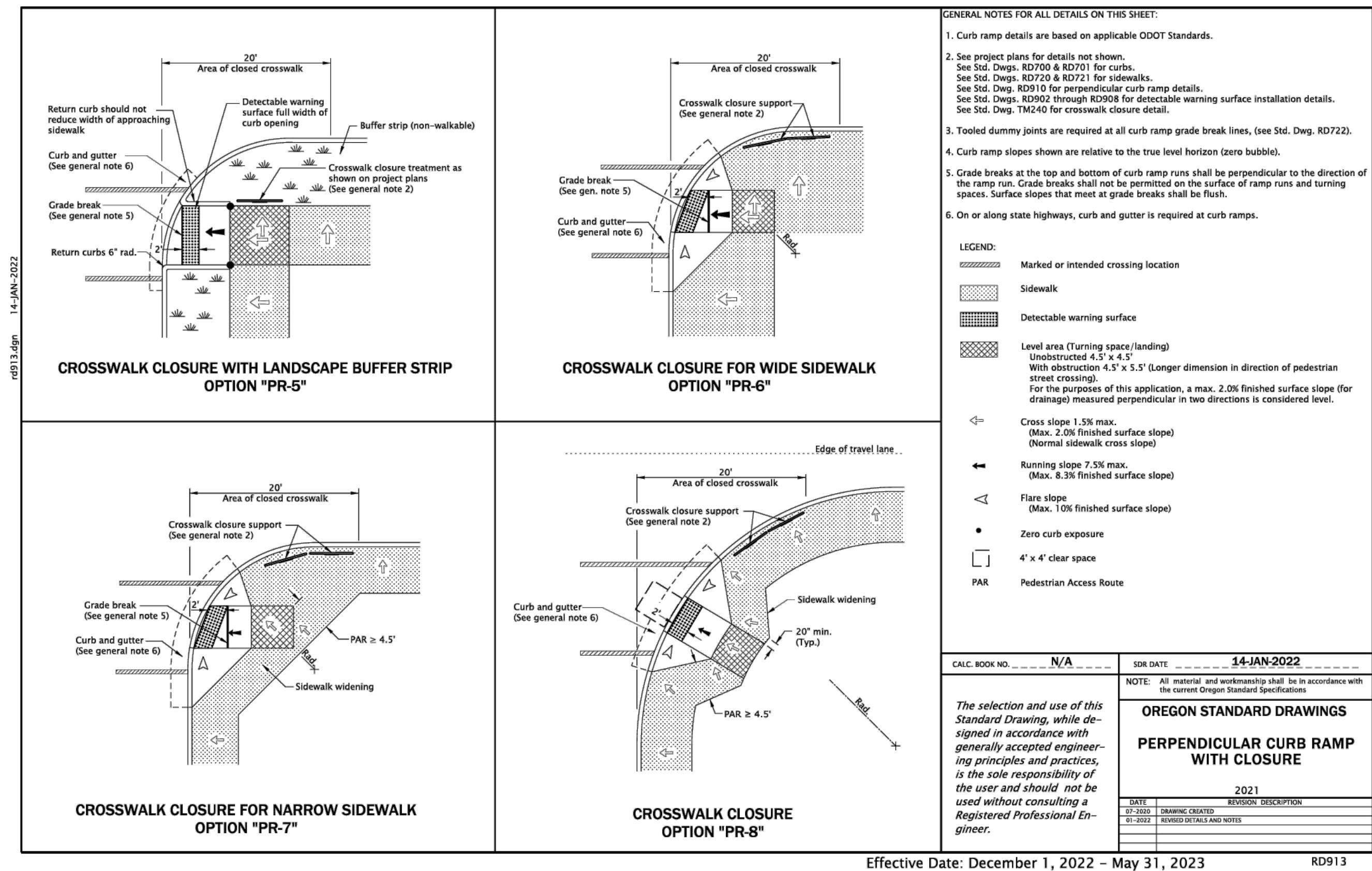
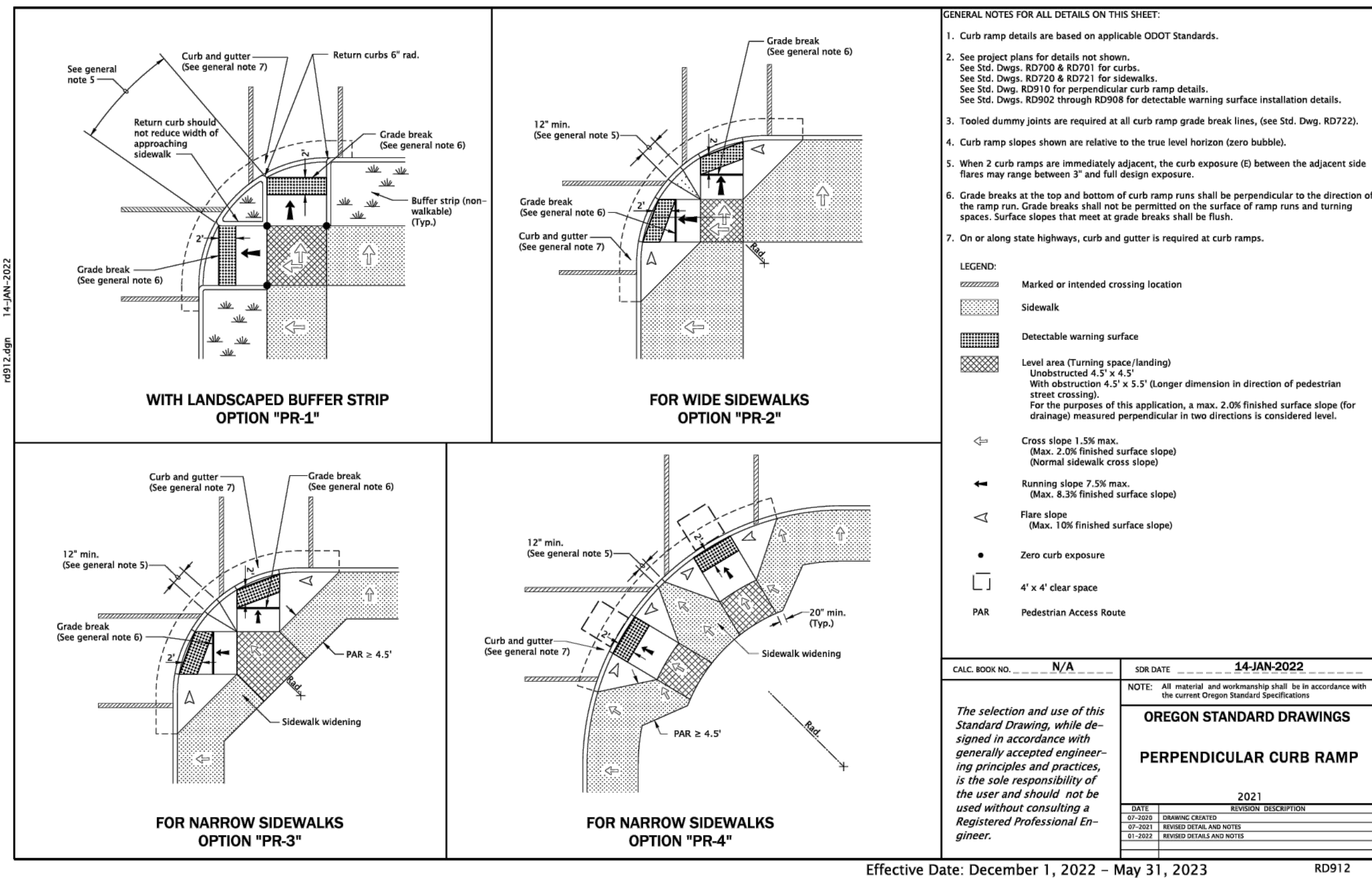
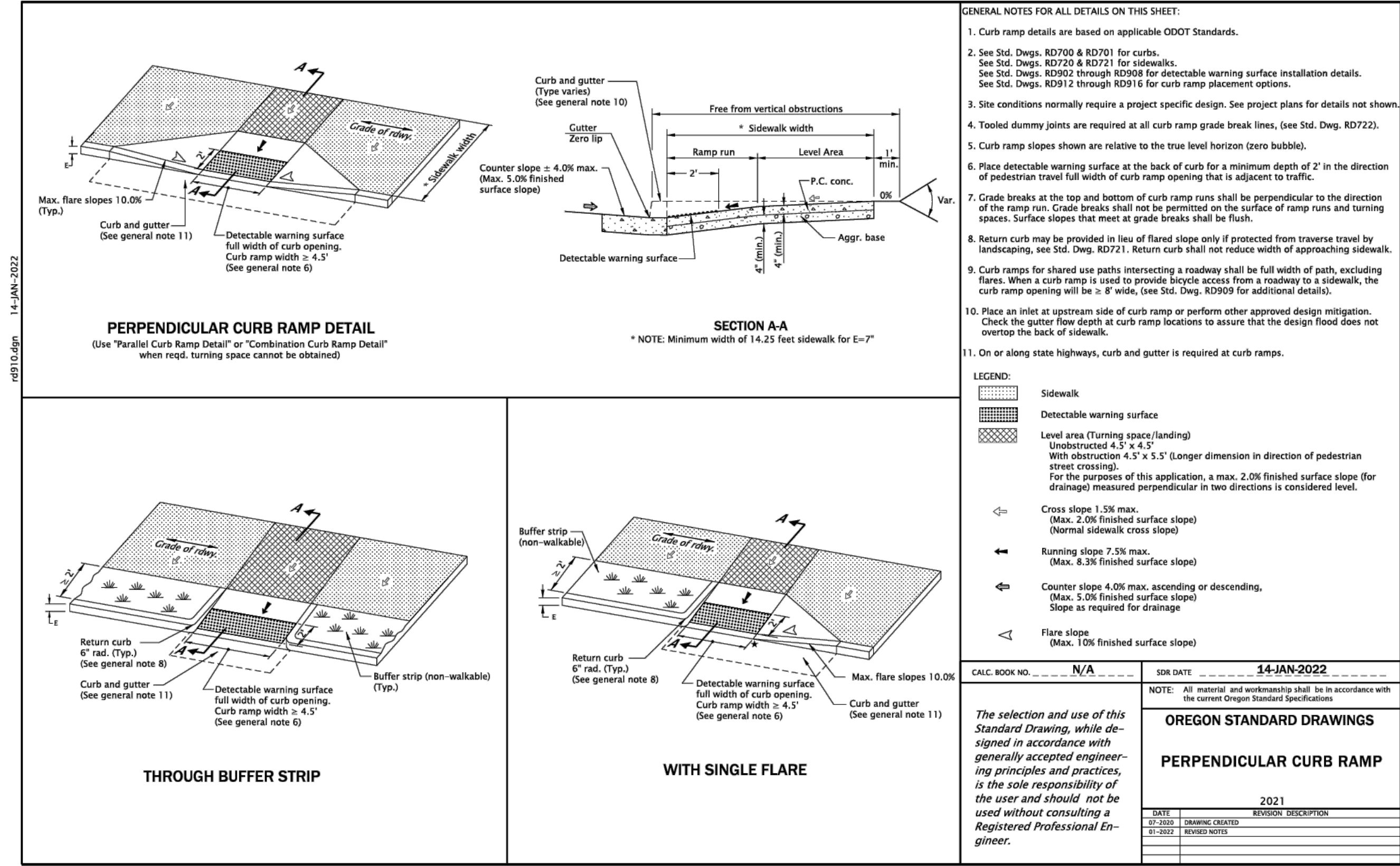
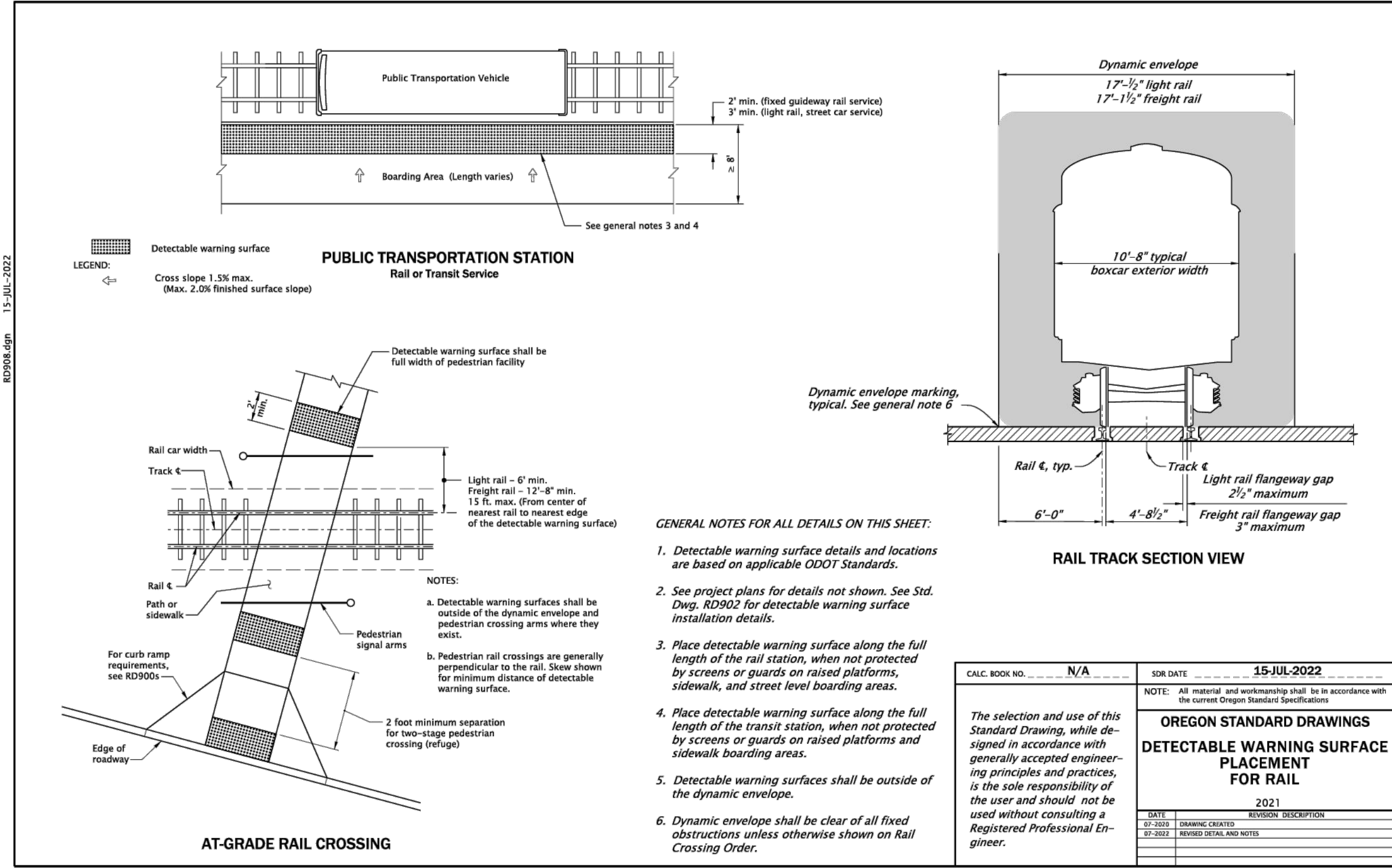
LEGEND:

- Detectable warning surface

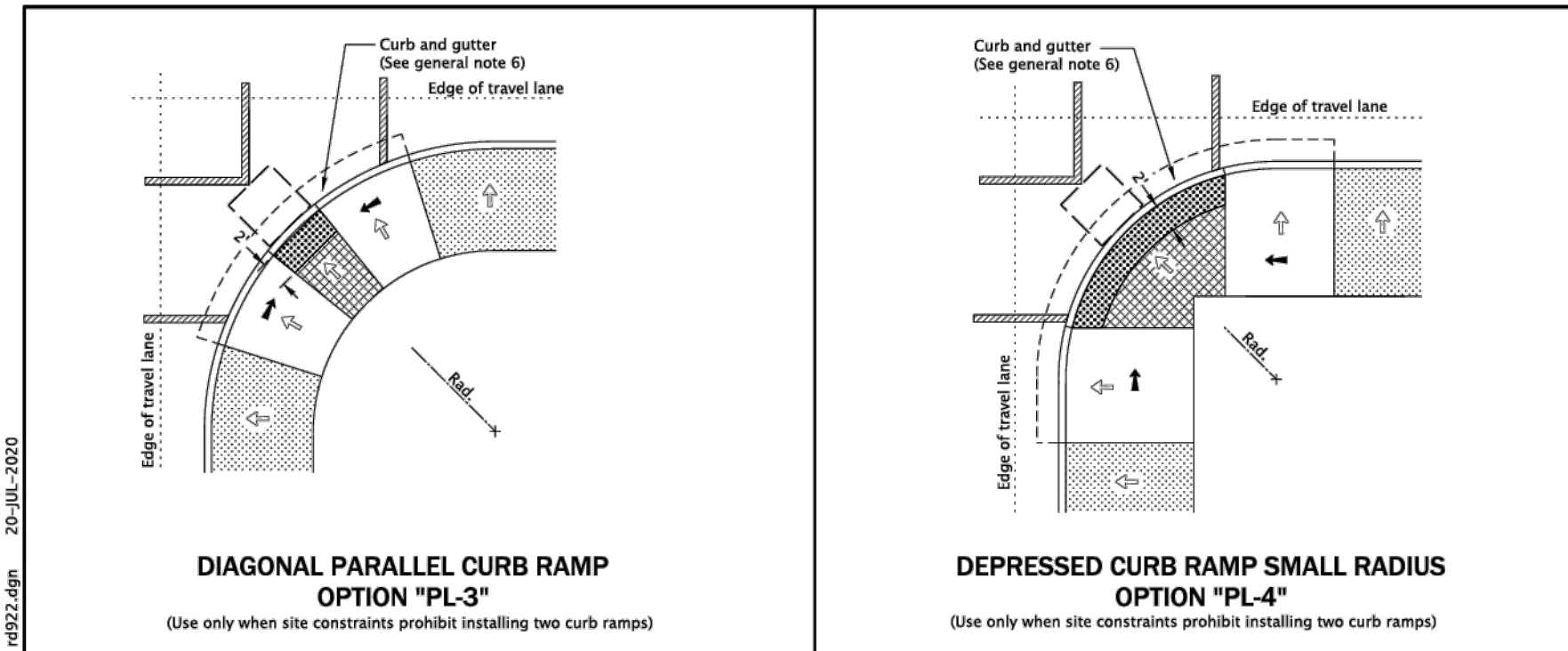
OREGON STANDARD DRAWINGS
DETECTABLE WARNING SURFACE PLACEMENT FOR ACCESSIBLE ROUTE ISLAND

2021

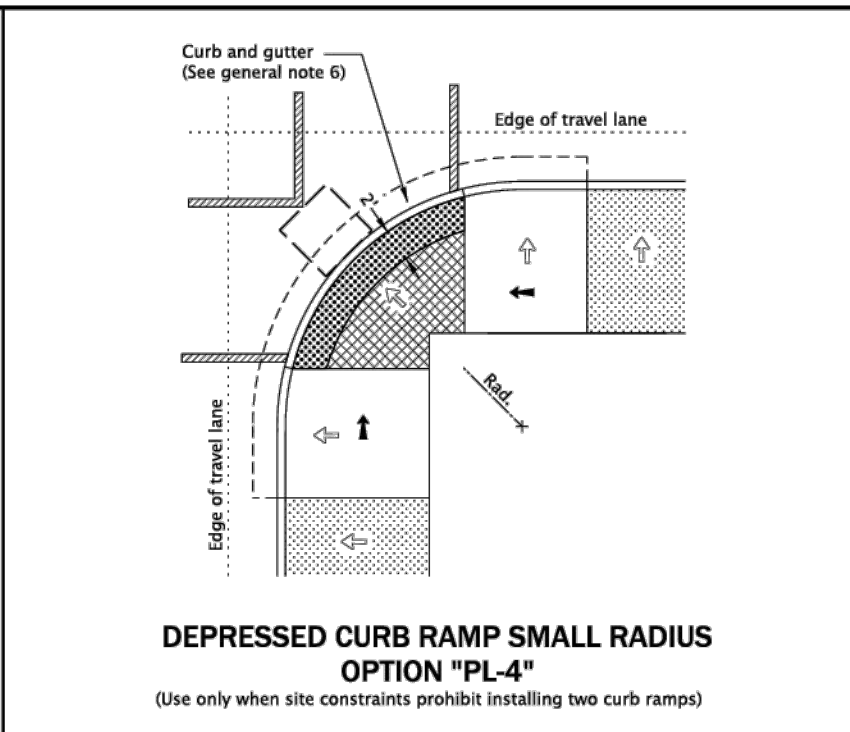
Effective Date: December 1, 2022 – May 31, 2023



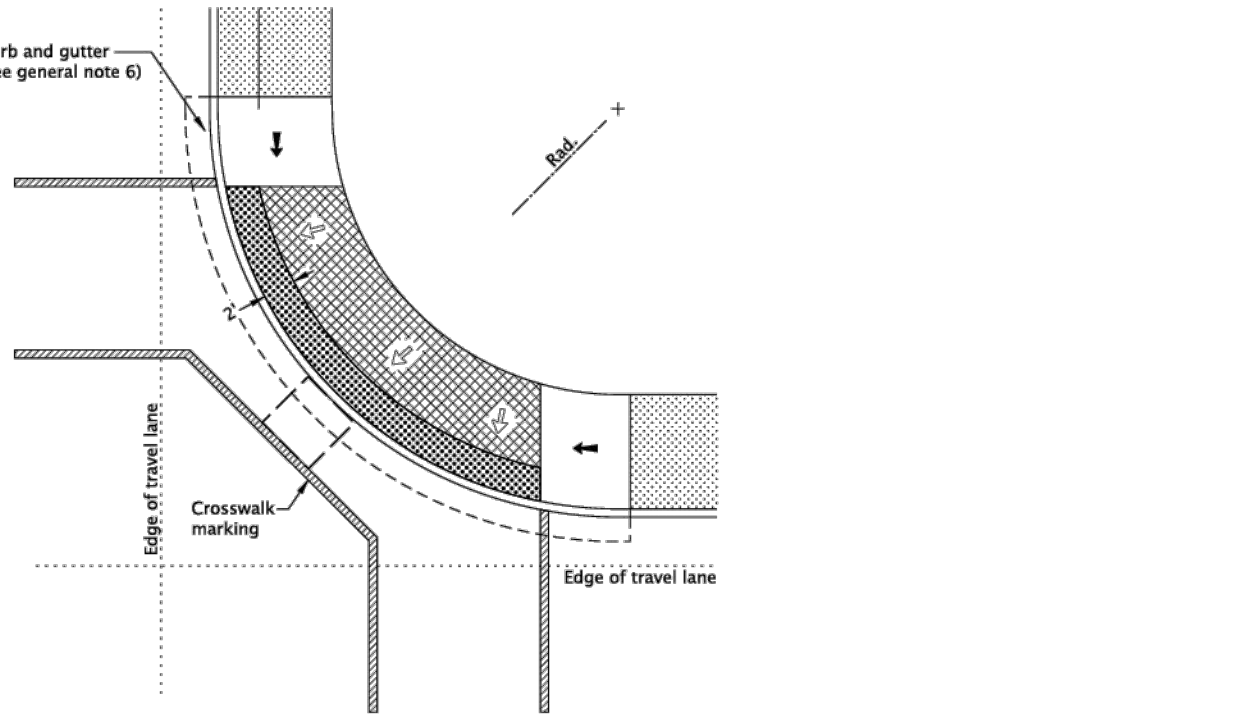
AKS DRAWING FILE: 8870_C880_DETAILS.DWG | LAYOUT: C184



DIAGONAL PARALLEL CURB RAMP
OPTION "PL-3"
 (Use only when site constraints prohibit installing two curb ramps)



DEPRESSED CURB RAMP SMALL RADIUS
OPTION "PL-4"
 (Use only when site constraints prohibit installing two curb ramps)



DEPRESSED CURB RAMP LARGE RADIUS
OPTION "PL-5"
 (Use only when site constraints prohibit installing two curb ramps)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Curb ramp details are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD720 & RD721 for sidewalks. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details. See Std. Dwg. RD920 for parallel curb ramp details.
- Tooled dummy joints are required at all curb ramp slope break lines. (see Std. Dwg. RD722).
- Curb ramp slopes shown are relative to the true level horizon (zero bubble).
- Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
- On or along state highways, curb and gutter is required at curb ramps.
- Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
- Only use curb ramp options allowed by jurisdiction. Single ramps require design exceptions on or along state highways.

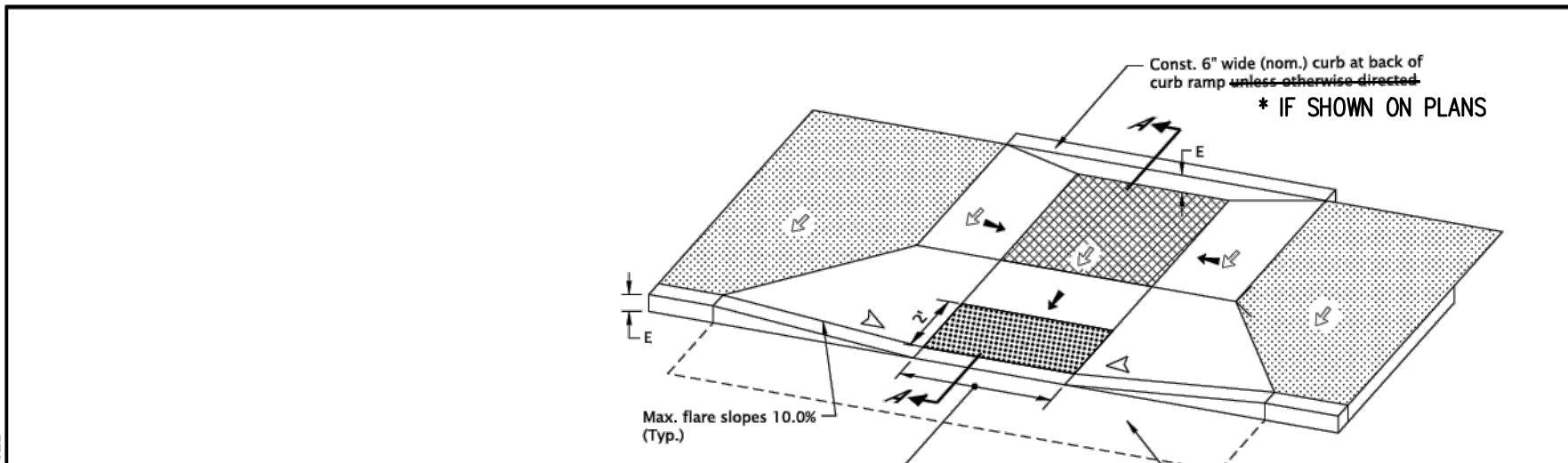
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
 Unobstructed 4.5' x 4.5'
 With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
 For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
 (Max. 2.0% finished surface slope)
 (Normal sidewalk cross slope)
- Running slope 7.5% max.
 (Max. 8.3% finished surface slope)
- 4'x4' clear space

CALC. BOOK NO.	N/A	SOR. DATE	20-JULY-2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications			
OREGON STANDARD DRAWINGS			
PARALLEL CURB RAMP			
SINGLE RAMP			
2021			
DATE	DRAWING CREATED	REVISION	DESCRIPTION
07-2020			

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.

Effective Date: December 1, 2022 – May 31, 2023 RD922



COMBINATION CURB RAMP DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Curb ramp details are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD720 & RD721 for sidewalks. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details. See project plans for details not shown.
- Site conditions normally require a project specific design. See project plans for details not shown.
- Tooled dummy joints are required at all curb ramp slope break lines. (see Std. Dwg. RD722).
- Curb ramp slopes shown are relative to the true level horizon (zero bubble).
- Place detectable warning surface at the back of curbs for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
- Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
- Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping. (see Std. Dwg. RD721). Return curb shall not reduce width of approaching sidewalk.
- Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be 8' wide. (see Std. Dwg. RD909 for additional details).
- On or along state highways, curb and gutter is required at curb ramps.
- Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.

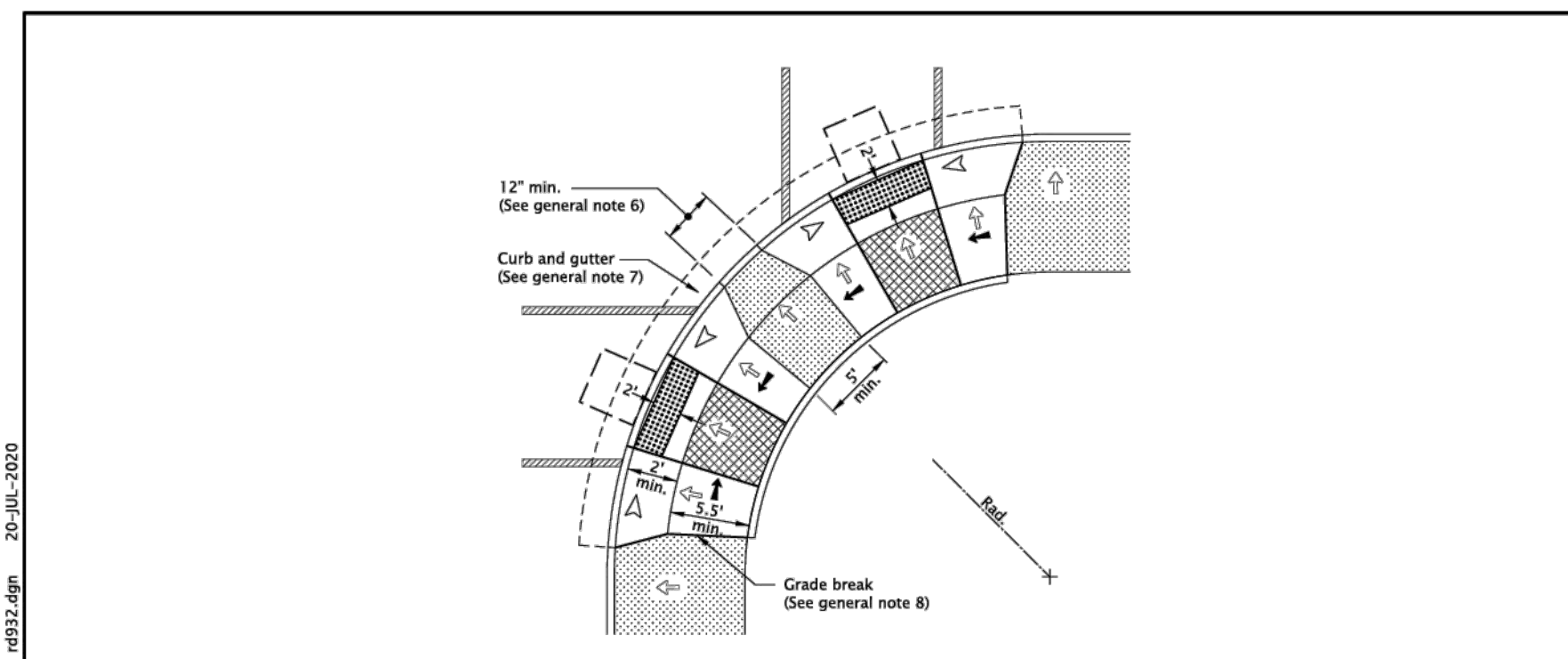
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
 Unobstructed 4.5' x 4.5'
 With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
 For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
 (Max. 2.0% finished surface slope)
 (Normal sidewalk cross slope)
- Running slope 7.5% max.
 (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending.
 (Max. 5.0% finished surface slope)
 Slope as required for drainage
- Flare slope
 (Max. 10% finished surface slope)

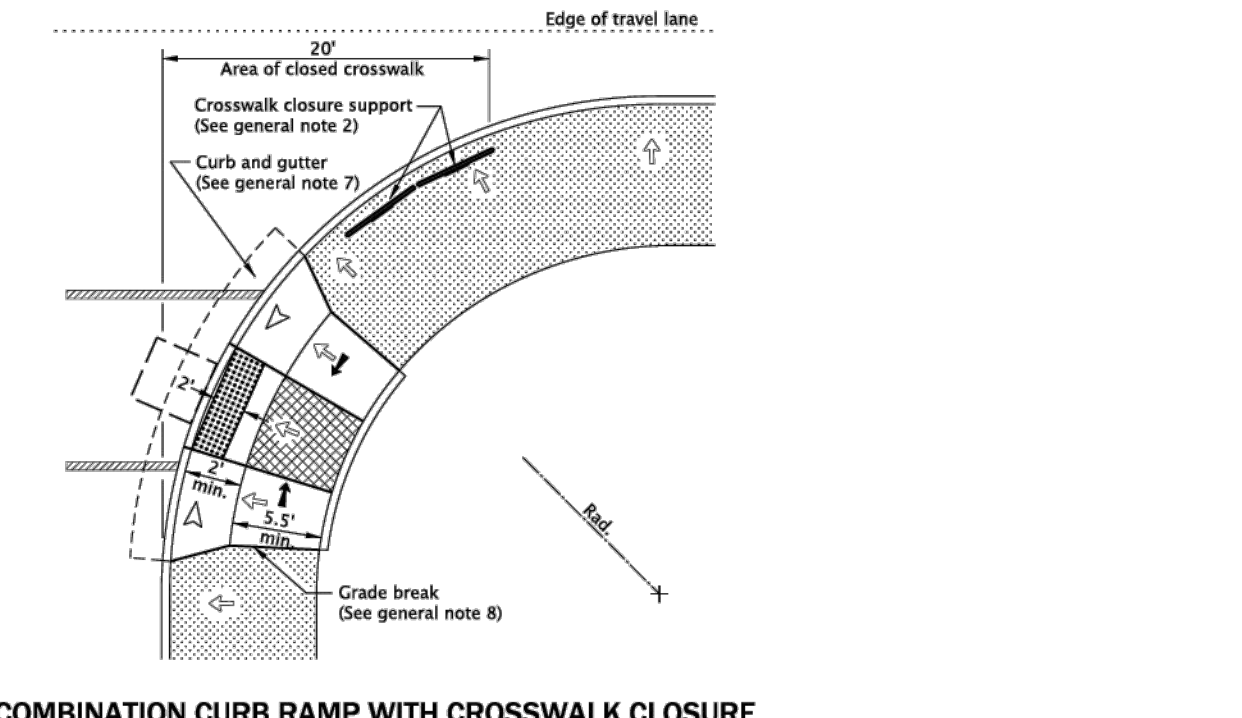
CALC. BOOK NO.	N/A	SOR. DATE	14-JAN-2022
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications			
OREGON STANDARD DRAWINGS			
COMBINATION CURB RAMP			
2021			
DATE	DRAWING CREATED	REVISION	DESCRIPTION
07-2020			

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.

Effective Date: December 1, 2022 – May 31, 2023 RD930



COMBINATION CURB RAMP
OPTION "CC-1"



COMBINATION CURB RAMP WITH CROSSWALK CLOSURE
OPTION "CC-2"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Curb ramp details are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD720 & RD721 for sidewalks. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details. See Std. Dwg. RD920 for combination curb ramp details. See Std. Dwg. TM240 for crosswalk closure detail.
- Site conditions normally require a project specific design. See project plans for details not shown.
- Tooled dummy joints are required at all curb ramp slope break lines. (see Std. Dwg. RD722).
- Curb ramp slopes shown are relative to the true level horizon (zero bubble).
- When 2 curb ramps are immediately adjacent, the curb exposure (E) between the adjacent side flares may range between 3" and full design exposure.
- On or along state highways, curb and gutter is required at curb ramps.
- Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.

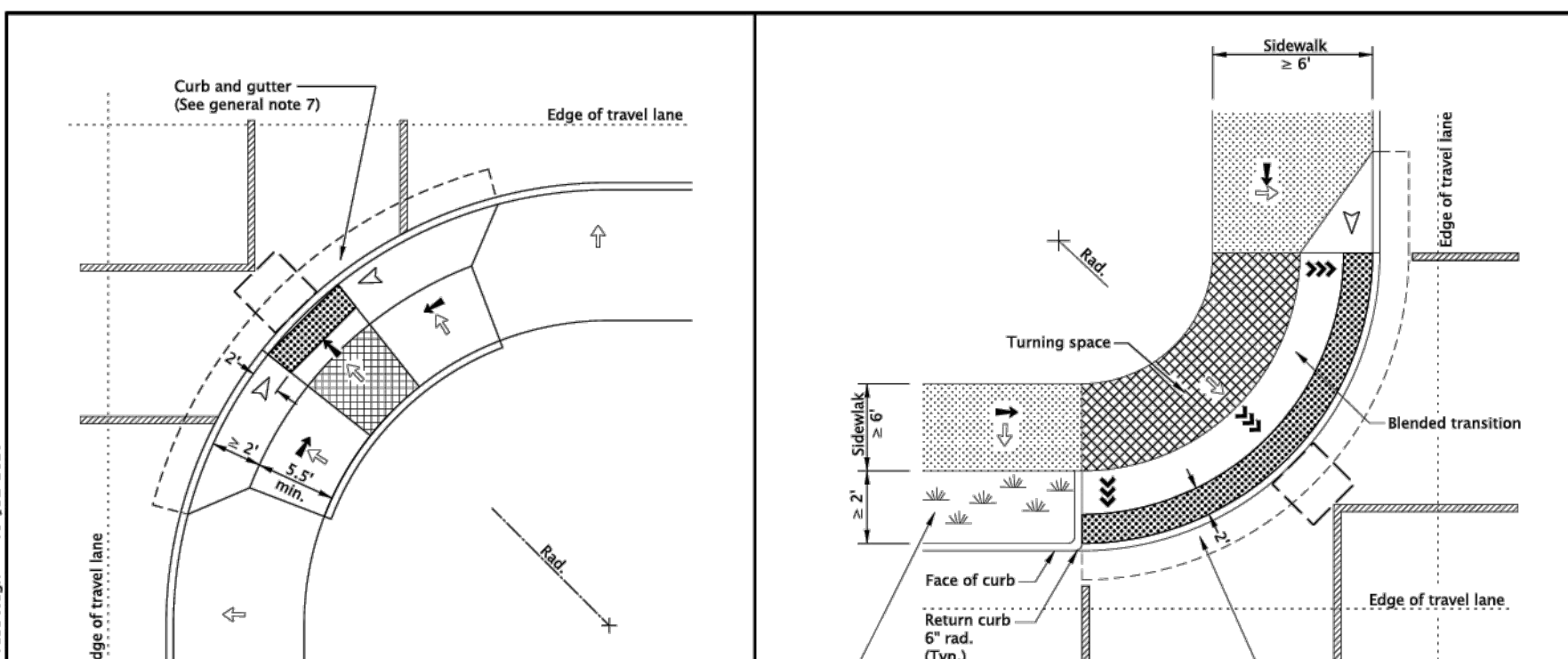
LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
 Unobstructed 4.5' x 4.5'
 With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
 For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
 (Max. 2.0% finished surface slope)
 (Normal sidewalk cross slope)
- Running slope 7.5% max.
 (Max. 8.3% finished surface slope)
- Flare slope
 (Max. 10% finished surface slope)
- 4'x4' clear space

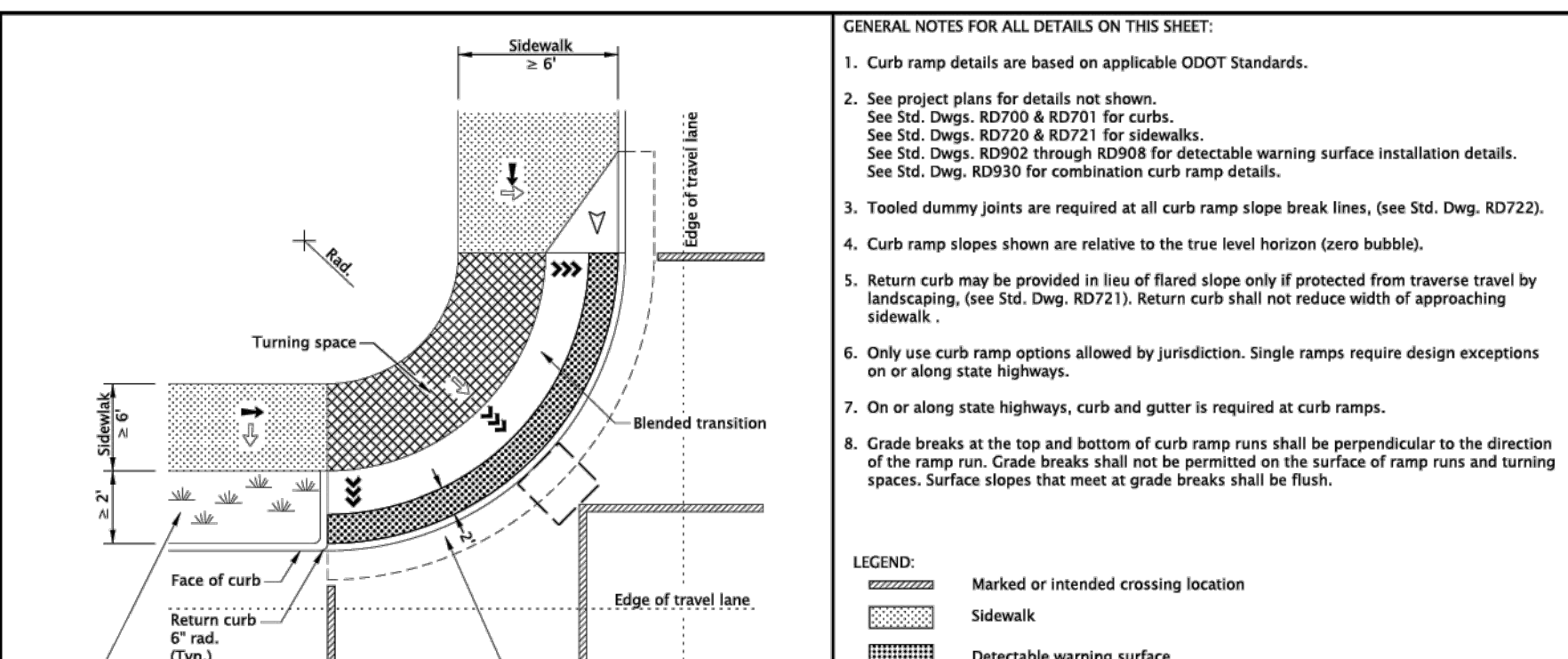
CALC. BOOK NO.	N/A	SOR. DATE	20-JULY-2020
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications			
OREGON STANDARD DRAWINGS			
COMBINATION CURB RAMP			
2021			
DATE	DRAWING CREATED	REVISION	DESCRIPTION
07-2020			

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.

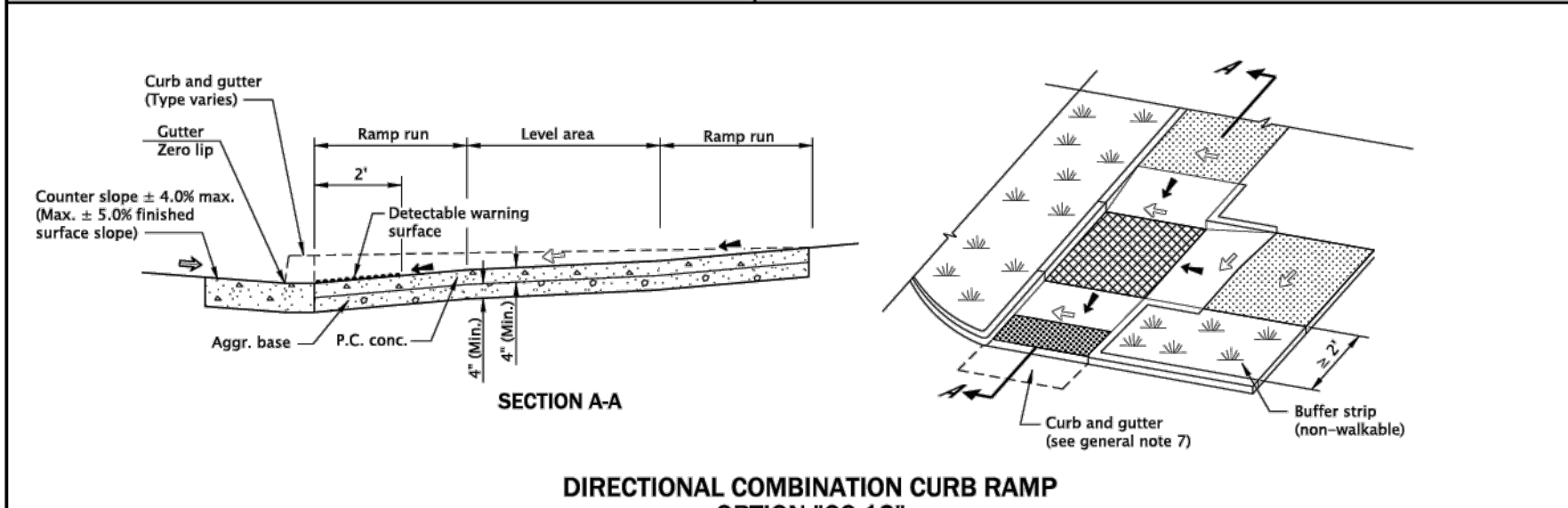
Effective Date: December 1, 2022 – May 31, 2023 RD932



DIAGONAL COMBINATION CURB RAMP
OPTION "CC-10"
 (Use only when site constraints prohibit installing two curb ramps)



BLENDED TRANSITION COMBINATION CURB RAMP
OPTION "CC-11"
 (Use only when site constraints prohibit installing two curb ramps)



DIRECTIONAL COMBINATION CURB RAMP
OPTION "CC-12"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Curb ramp details are based on applicable ODOT Standards.
- See project plans for details not shown. See Std. Dwg. RD700 & RD701 for curbs. See Std. Dwg. RD720 & RD721 for sidewalks. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details. See Std. Dwg. RD930 for combination curb ramp details.
- Tooled dummy joints are required at all curb ramp slope break lines. (see Std. Dwg. RD722).
- Curb ramp slopes shown are relative to the true level horizon (zero bubble).
- Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping. (see Std. Dwg. RD721). Return curb shall not reduce width of approaching sidewalk.
- Only use curb ramp options allowed by jurisdiction. Single ramps require design exceptions on or along state highways.
- On or along state highways, curb and gutter is required at curb ramps.
- Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.

LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
 Unobstructed 4.5' x 4.5'
 With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
 For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
 (Max. 2.0% finished surface slope)
 (Normal sidewalk cross slope)
- Running slope 7.5% max.
 (Max. 8.3% finished surface slope)
- Running slope 4.0% max.
 (Max. 4.9% finished surface slope)
- Flare slope
 (Max. 10% finished surface slope)
- 4'x4' clear space

CALC. BOOK NO.	N/A	SOR. DATE	19-JULY-2021
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications			
OREGON STANDARD DRAWINGS			
COMBINATION CURB RAMP			
SINGLE RAMP			
2021			
DATE	DRAWING CREATED	REVISION	DESCRIPTION
07-2021			

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.

Effective Date: December 1, 2022 – May 31, 2023 RD938

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT Standards.
2. See project plans for details not shown.
3. See Std. Dwg. RD700 & RD701 for curbs.
4. See Std. Dwg. RD720 & RD721 for sidewalks.
5. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details.
6. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details.
7. See Std. Dwg. RD902 for parallel curb ramp details.
8. Site conditions normally require a project special design. See project plans for details not shown.
9. Tooled dummy joints are required at all curb ramp grade break lines. (See Std. Dwg. RD722).
10. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
11. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
12. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
13. Return curb may be provided in lieu of flared slope only if protected from traverse by landscaping. Return curb shall not reduce width of approaching sidewalk.
14. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be $\geq 8'$ wide.
15. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
16. On or along state highways, curb and gutter is required at curb ramps.
17. Only use curb ramp options allowed by jurisdiction. Single ramp requires design exceptions on or along state highways.

LEGEND:

- Marked or intended crossing location
- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
 - Unobstructed 4.5' x 4.5'
 - With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
 - For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Counter slope 4.0% max. ascending or descending (Max. 5.0% finished surface slope) Slope as required for drainage
- Running slope 4.0% max. (Max. 4.5% finished surface slope)
- Flare slope (Max. 10% finished surface slope)
- 4'x4' clear space

OREGON STANDARD DRAWINGS
BLENDED TRANSITION CURB RAMP
SINGLE RAMP

2021

Effective Date: December 1, 2022 – May 31, 2023 RD940

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on applicable ODOT applicable Standards.
2. See project plans for details not shown.
3. See Std. Dwg. RD700 & RD701 for curbs.
4. See Std. Dwg. RD720 & RD721 for sidewalks.
5. See Std. Dwg. RD902 through RD908 for detectable warning surface installation details.
6. See Std. Dwg. RD902 for parallel curb ramp details.
7. Site conditions normally require a project special design. See project plans for details not shown.
8. Tooled dummy joints are required at all curb ramp grade break lines. (See Std. Dwg. RD722).
9. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
10. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
11. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
12. When a shared use path terminates, the curb ramp shall be the full width of the path, the turning space Y-dimension should be minimum 8' wide to enable bicycles to ride from ramp to shoulder.
13. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
14. On or along state highways, curb and gutter is required at curb ramps.
15. Unique curb ramp option can be used for curved or tangent roadway sections. Superelevated roadways require a site specific detail.

LEGEND:

- Sidewalk
- Transition panel
- Detectable warning surface
- Level area (Turning space/landing)
 - Unobstructed 4.5' x 4.5'
 - With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
 - For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending (Max. 5.0% finished surface slope) Slope as required for drainage

OREGON STANDARD DRAWINGS
UNIQUE CURB RAMP

2021

Effective Date: December 1, 2022 – May 31, 2023 RD960

GENERAL NOTES:

1. TRANSITION CURBS OF DIFFERENT EXPOSURES OVER A LENGTH EQUAL TO 2' FOR EACH INCH IN DIFFERENCE OF EXPOSURE.
2. TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% MAX.
3. GUTTER PAN SLOPE TO MATCH EXISTING STREET CROSS SLOPE UP TO A MAXIMUM OF 5% AND PER P-549 AT CURB RAMPS.
4. 18" GUTTER PAN TYPICAL. USE 12" GUTTER PAN WHEN ADJACENT TO BIKE LANES. USE 24" GUTTER PAN FOR GRADE BREAK DIFFERENCE AT CURB RAMPS (SEE STD. DRG. NO. P-549).
5. MODIFIED CURB AND GUTTER, AND THICKENED CURB AND GUTTER FOR USE ADJACENT TO SURFACE STORMWATER FACILITIES.

PORTLAND BUREAU OF TRANSPORTATION
PBOT
Standard Drawing Title
CURBS

Note: 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.

Note: All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Effective Date: 05/18/2022
Calc. Book No.: N/A
Std. Drg. Report Date: 02/18/2022

Standard Drawing No. **P-540**

DESIGNER INFORMATION:

1. Adapt this plan and section view example to your engineered design. Maximize surface storage.
2. Area and depth of facility are based upon engineering calculations and right-of-way constraints.
3. Provide beginning and ending stations for each facility. Provide stationing and/or dimensions and elevations at each inlet, outlet, check dam, notches and wall corners.
4. Show lines: slotted pipe, 24" depth stormwater facility blended soil, and rock gallery in section when required. Refer to SWMM Detail SW-316: Facility Configuration Sections.
5. Sidewalk elevation must be set above check dam and inlet elevations to allow overflow to drain to street before sidewalk.
6. Place 4-in wide drainage notch at low point in sidewalk. Space additional notches 6-ft apart.
7. Proposed utility lines to be located out of facility or per details P-331, P-332, and P-333.
8. Depress gutter pan Flow Line (FL) 2-in to Bottom of Inlet (BI).

RELATED DETAILS AND RESOURCES:

9. City of Portland Standard Drawings:
 - 9.1. P-300: Concrete Inlet, Type Metal
 - 9.2. P-301: Concrete Inlet, Type Metal (Rotated)
 - 9.3. P-540: Curbs, 18" Thickened Curb and Gutter, typ. When adjacent to a bike lane use 12" Thickened Curb and Gutter.
 - 9.4. P-551: Sidewalks, Monolithic Curb and Sidewalk
 - 9.5. P-307: Planter Walls
 - 9.6. P-308: Curb Extension Outlet Notch
 - 9.7. P-332: Utility Coordination Water Service Line Sleeving
 - 9.8. P-333: Utility Coordination Water Asset Clearances
 - 9.9. P-434: Pavement Marking Standard Detail Blocks, Curb Extension Detail and Midblock Curb Extension Pavement Markings
10. Stormwater Management Manual:
 - 10.1. SW-312: Check Dam - Infiltration Facility
 - 10.2. SW-313: Check Dam - Infiltration Facility with Rock
 - 10.3. SW-314: Check Dam - Partial Infiltration Facility with Weep Holes
 - 10.4. SW-315: Check Dam - Lined Facility with Weep Holes

CONSTRUCTION NOTES:

11. In facilities that are unlined, fracture and loosen soil - DO NOT TILL - to a depth of 12-in below stormwater facility blended soil excavation before installing aggregates or blended soil.

IMPORTANT: Utility conflicts and existing conditions can create major design variables. Locate utilities and survey existing conditions prior to beginning design work and include information on design drawings.

The Portland Bureau of Transportation (PBOT), Portland Water Bureau (PWB), and Bureau of Environmental Services (BES) are responsible for the review and approval of Stormwater Swales in the public right of way. Stormwater facilities in Wellhead Protection Areas may require special containment measures as required by City Code 21.35.

For more information contact:
PBOT (503) 823-7884
BES (503) 823-7761
PWB (503) 823-7368
Urban Forestry (503) 823-8733

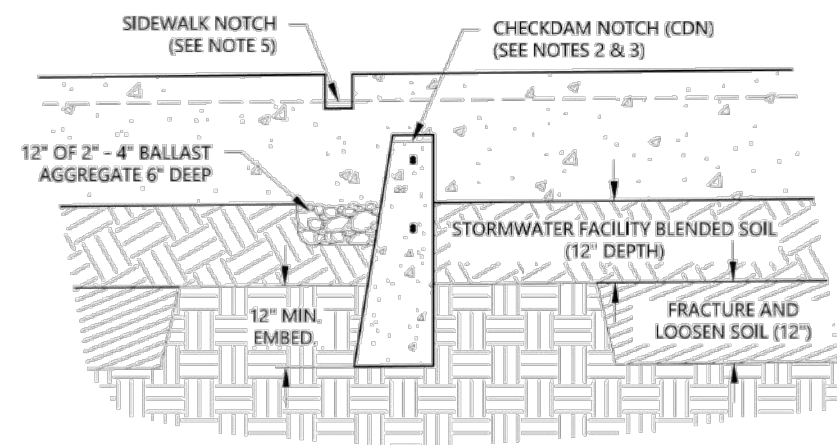
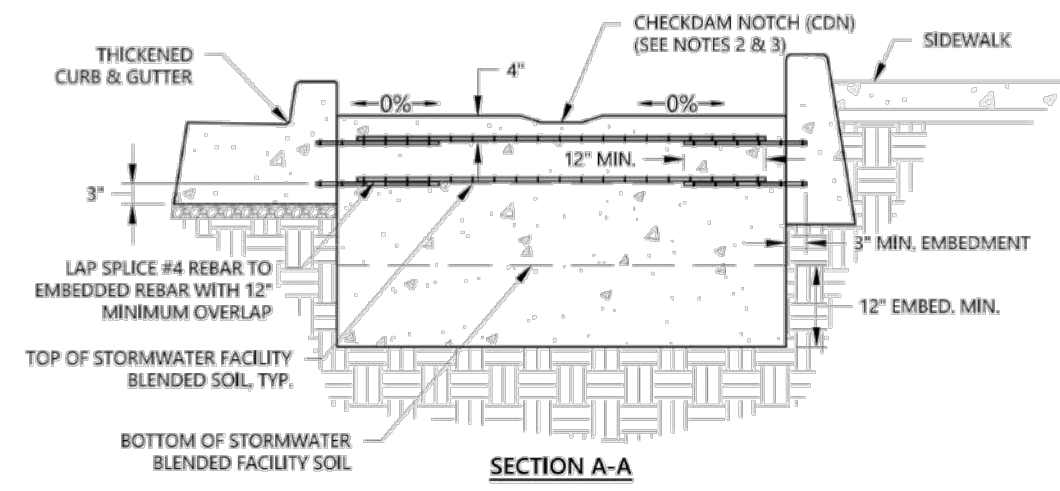
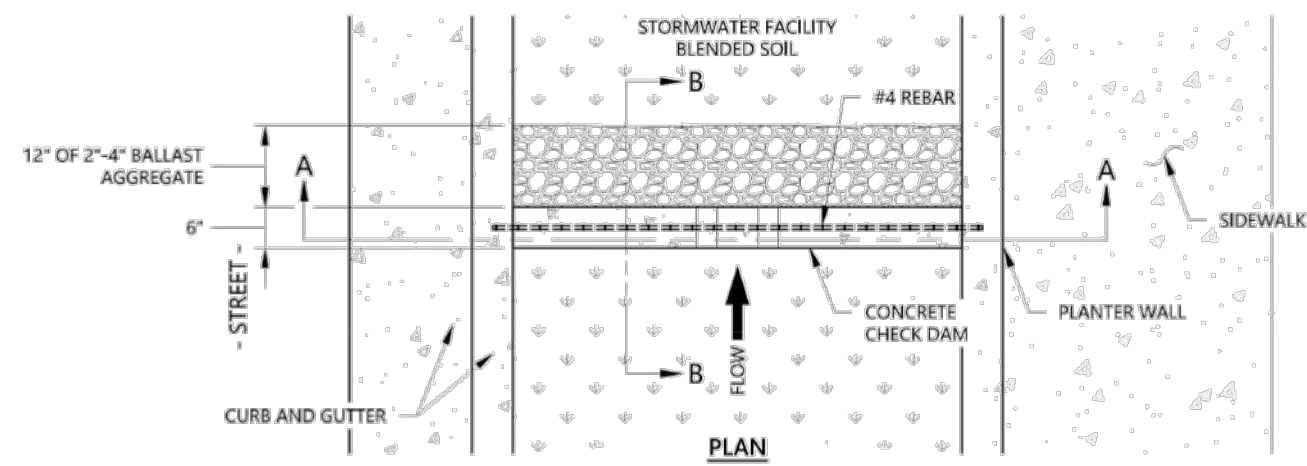
Bureau of Environmental Services
CITY OF PORTLAND, OREGON
2020 STORMWATER MANAGEMENT MANUAL

SWMM Detail Title
CURB EXTENSION WITH PLANTING STRIP
PLAN AND SECTION VIEWS

Effective Date: 12-14-2020
Calc. Book No.: N/A
Baseline Report Date: N/A


SWMM Detail No. **SW-305**

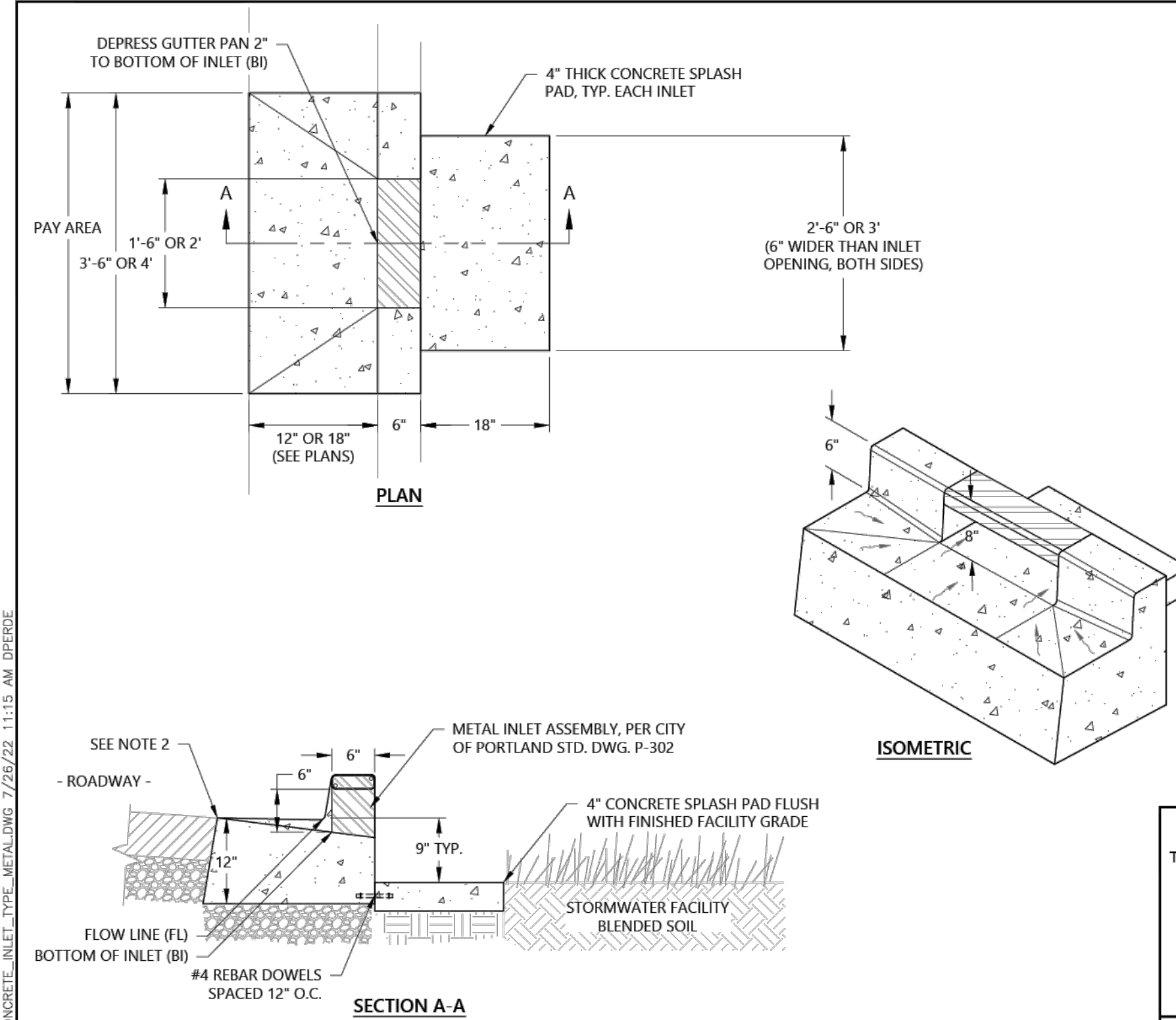
250250MMI-DETAILS.DWG 12/29/20 11:16 AM SHERZ



DESIGNER INFORMATION:


1. USE THIS DETAIL FOR FACILITIES WITH $>2"$ PER HOUR NATIVE INFILTRATION RATE, OR FOR FACILITIES DESIGNED FOR COMPLETE INFILTRATION OF THE 10-YEAR EVENT.
2. CHECK DAM NOTCH (CDN) ELEVATION TO BE WHICHEVER IS LOWEST: EQUAL TO THE FLOW LINE ELEVATION AT THE UPSTREAM INLET OF THE FACILITY, 2" BELOW THE ELEVATION OF THE SIDEWALK ADJACENT TO THE CHECK DAM, OR 2" BELOW THE ELEVATION OF THE TOP-OF-CURB (TOC) ADJACENT TO THE. IF IT IS NOT THEN CONTACT INSPECTOR FOR DIRECTION.
3. ENSURE THAT THE CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK, OR BACKWATER INTO THE STREET.
4. A PARTIAL LINER MAY BE REQUIRED ON THE STREET SIDE OR SIDEWALK SIDE DEPENDING ON EXISTING CONDITIONS, REFER TO CONSTRUCTION DRAWINGS. ATTACH LINER PER CITY OF PORTLAND STANDARD DRAWING P-300.
5. WHERE FEASIBLE, LOCATE SIDEWALK DRAINAGE NOTCHES IMMEDIATELY DOWNSTREAM OF CONCRETE CHECK DAMS TO MINIMIZE DROP FROM SIDEWALK TO FACILITY SOIL.

 <p>Bureau of Environmental Services CITY OF PORTLAND, OREGON 2020 STORMWATER MANAGEMENT MANUAL</p>	
SWM Detail Title	
CHECK DAM - INFILTRATION FACILITY	
Effective Date: 12-14-2020	SWM Detail No.
Calc. Book No.: N/A	SW-312
Baseline Report Date: N/A	



NOTES:


1. REFER TO CITY OF PORTLAND STANDARD DRAWING P-540 FOR 18" THICKENED CURB AND GUTTER.
2. SMOOTH TRANSITION TO ENSURE WATER FLOWS INTO GUTTER.
3. PAY AREA INCLUDES ALL CONCRETE ITEMS SHOWN INCLUDING SPLASH PADS AND METAL INLET ASSEMBLY.

<p>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.</p>	 <p>Bureau of Environmental Services CITY OF PORTLAND, OREGON Paul Suto Chief Engineer</p>	
	STANDARD DRAWING Title	
<p>Note: All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.</p>	CONCRETE INLET, TYPE METAL	
	Effective Date: 07-31-20	Standard Drawing No.
	Calc. Book No.: N/A	P-300
Baseline Report Date: N/A		

**WASHINGTON STREET
AREA IMPROVEMENTS
MILWAUKIE
OREGON**

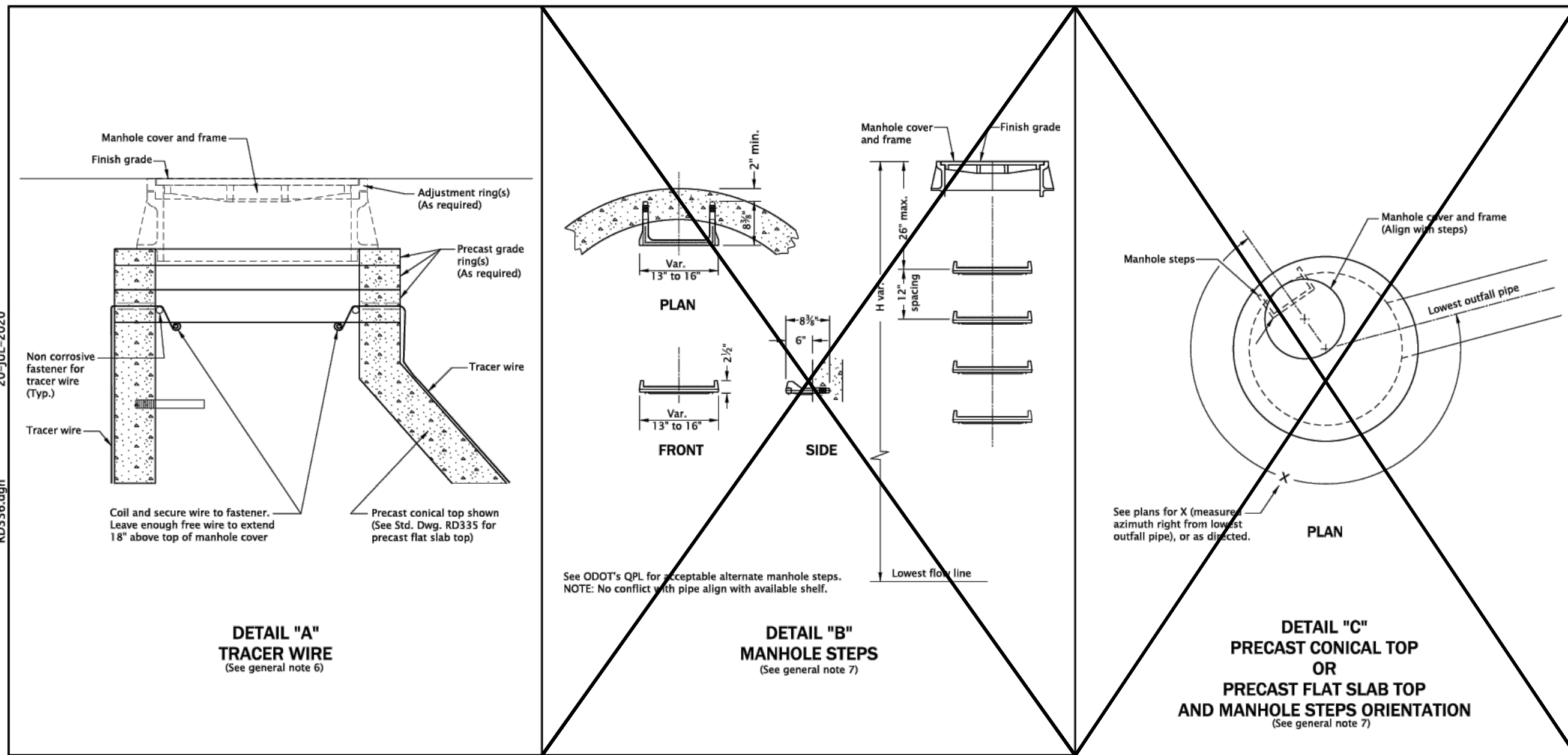
STREET DETAILS

DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC

DATE: 06/07/2024

 RENEWAL DATE: 12/31/25
 REVISIONS:

JOB NUMBER
8970
SHEET
C187

MODIFIED BY AKS



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- All precast products shall conform to requirements of ASTM C478.
- Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
- See Std. Dwg. RD345 for pipe to manhole connections.
- See Std. Dwg. RD344 for manhole base section.
- Adjust 24" maximum.
- All connecting pipes shall have a tracer wire, or approved alternate. Place tracer wire directly over pipe centerline and on top of the pipe zone material.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- All precast products shall conform to the requirements of ASTM C478.
- See Std. Dwg. RD335 for details not shown.
- See Std. Dwg. RD335 for manhole covers and frames, manhole adjustment rings, etc.
- Max. pipe diameter varies with pipe material.
- See Std. Dwg. RD343 for shallow manholes.
- See project plans for details not shown.

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 first consulting a Registered Professional Engineer.

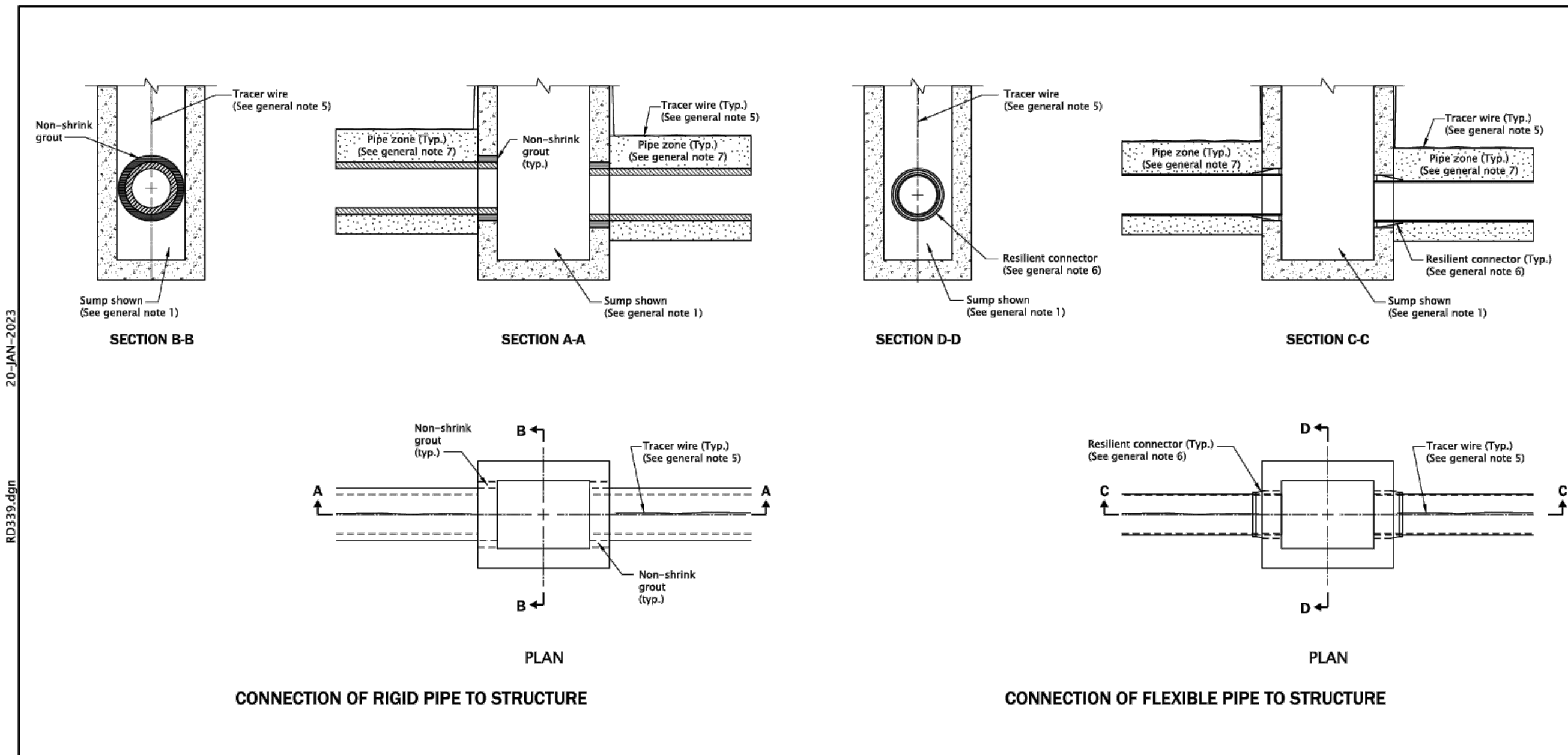
OREGON STANDARD DRAWINGS
STANDARD MANHOLE DETAILS
2021

DATE	REVISION DESCRIPTION

SCALE: BOOK NO. N/A SHEET DATE: 16-JAN-2019 **RD336**

Effective Date: June 1, 2023 – November 30, 2023

MODIFIED BY AKS



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- See Std. Dwg. RD335 for details not shown.
- See appropriate standard drawings or special project details for other similar structures.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- Maximum pipe diameter varies with pipe material.
- All connecting pipes shall have a tracer wire, or approved alternate. See Std. Dwg. RD336 for tracer wire details.
- When flexible pipe is used, install resilient connectors conforming to requirements of ASTM C923.
- Pipe zone varies, see Std. Dwg. RD300.

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 first consulting a Registered Professional Engineer.

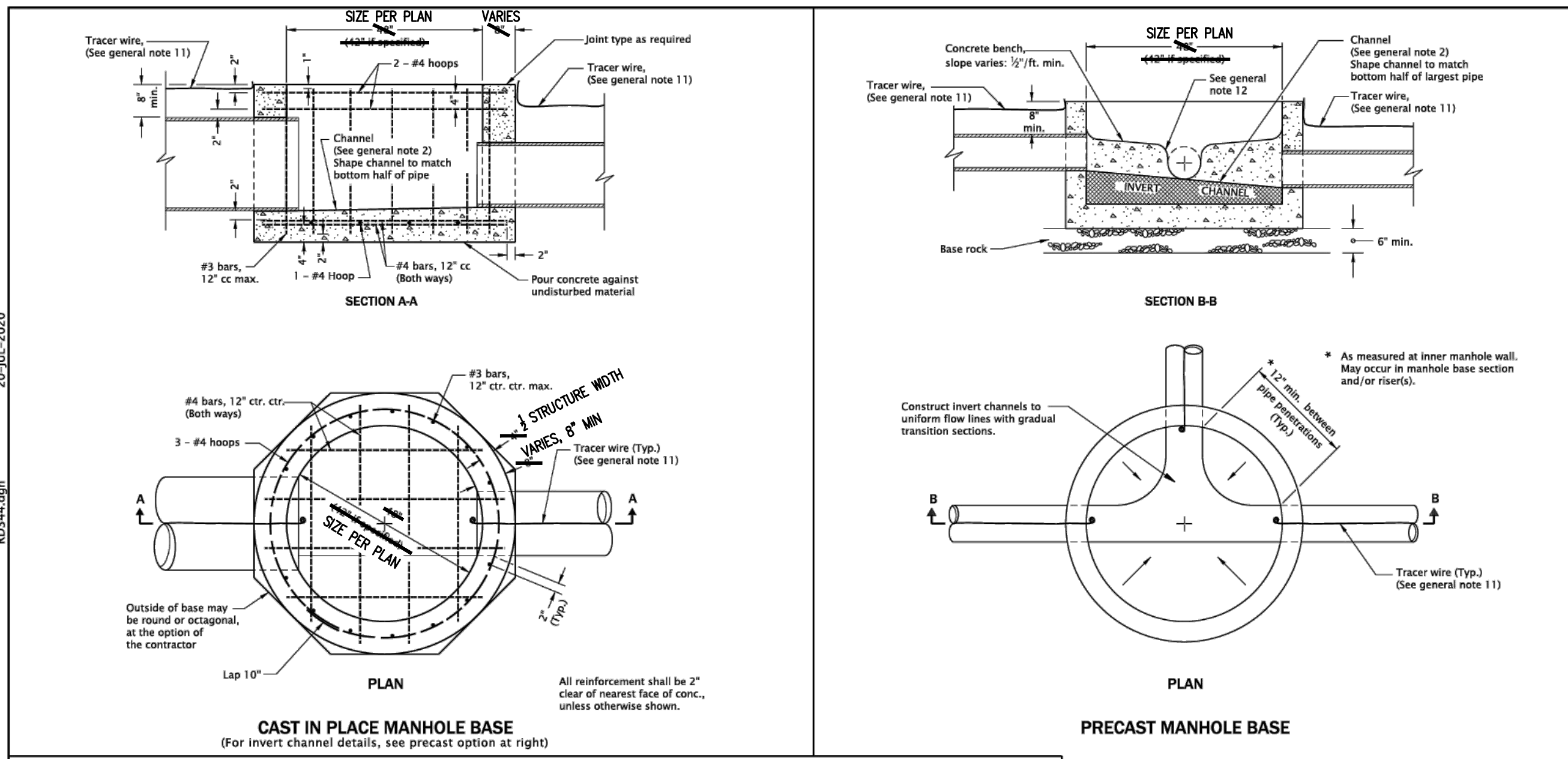
OREGON STANDARD DRAWINGS
PIPE TO STRUCTURE CONNECTIONS
2021

DATE	REVISION DESCRIPTION

SCALE: BOOK NO. N/A SHEET DATE: 20-JAN-2023 **RD339**

Effective Date: June 1, 2023 – November 30, 2023

MODIFIED BY AKS



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- All concrete shall be commercial grade concrete.
- Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
- Bases may be precast or cast in place.
- Max. pipe diameter varies with pipe material.
- See Std. Dwg. RD343 for shallow manholes.
- Extend pipe into manhole and grout smooth. Pipes may extend 2" max. beyond the interior manhole wall.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- All precast products shall conform to the requirements of ASTM C478.
- See Std. Dwg. RD345 for pipe to manhole connections.
- See Std. Dwg. RD336 for manhole steps details.
- See Std. Dwg. RD336 for tracer wire details.
- At spring line of pipe, extend channel up to crown line on 12:1 batter.

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 first consulting a Registered Professional Engineer.

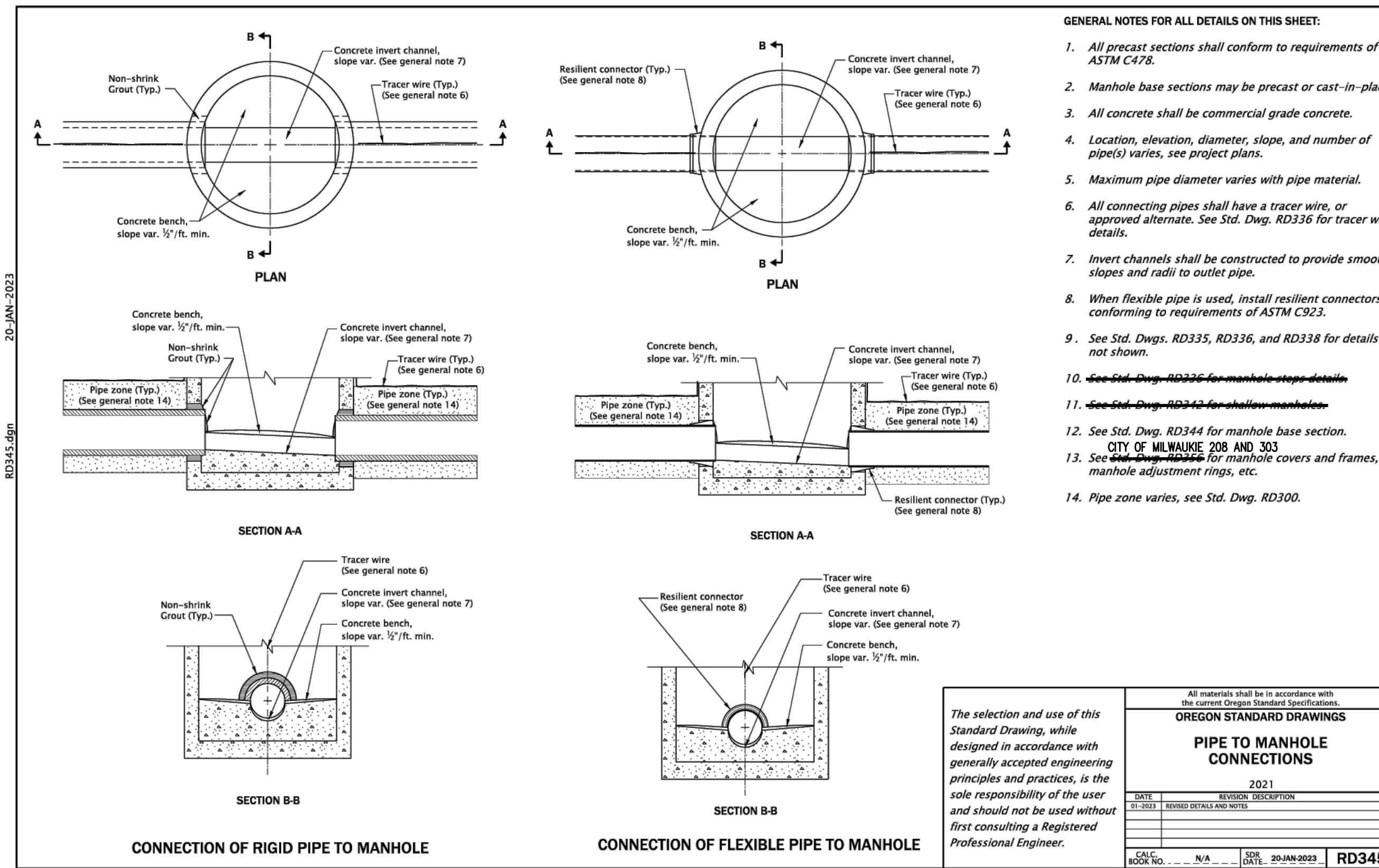
OREGON STANDARD DRAWINGS
STANDARD MANHOLE BASE SECTION
2021

DATE	REVISION DESCRIPTION

SCALE: BOOK NO. N/A SHEET DATE: 14-JUL-2014 **RD344**

Effective Date: June 1, 2023 – November 30, 2023

MODIFIED BY AKS



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- All precast sections shall conform to requirements of ASTM C478.
- Manhole base sections may be precast or cast-in-place.
- All concrete shall be commercial grade concrete.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- Maximum pipe diameter varies with pipe material.
- All connecting pipes shall have a tracer wire, or approved alternate. See Std. Dwg. RD336 for tracer wire details.
- Invert channels shall be constructed to provide smooth slopes and radii to outlet pipe.
- When flexible pipe is used, install resilient connectors conforming to requirements of ASTM C923.
- See Std. Dwg. RD335, RD336, and RD338 for details not shown.
- See Std. Dwg. RD343 for shallow manholes.
- See Std. Dwg. RD344 for manhole base section.
- See Std. Dwg. RD335 for manhole covers and frames, manhole adjustment rings, etc.
- Pipe zone varies, see Std. Dwg. RD300.

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 first consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS
PIPE TO MANHOLE CONNECTIONS
2021

DATE	REVISION DESCRIPTION

SCALE: BOOK NO. N/A SHEET DATE: 20-JAN-2023 **RD345**

Effective Date: June 1, 2023 – November 30, 2023

AKS DRAWING FILE: 8870_C800_DETAILS.DWG | LAYOUT: C252

DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC

DATE: 06/07/2024

REGISTERED PROFESSIONAL
ENGINEER
76382PE

OREGON
JUNE 29, 2009
JOHN P. CHRISTENSEN

RENEWAL DATE: 12/31/25

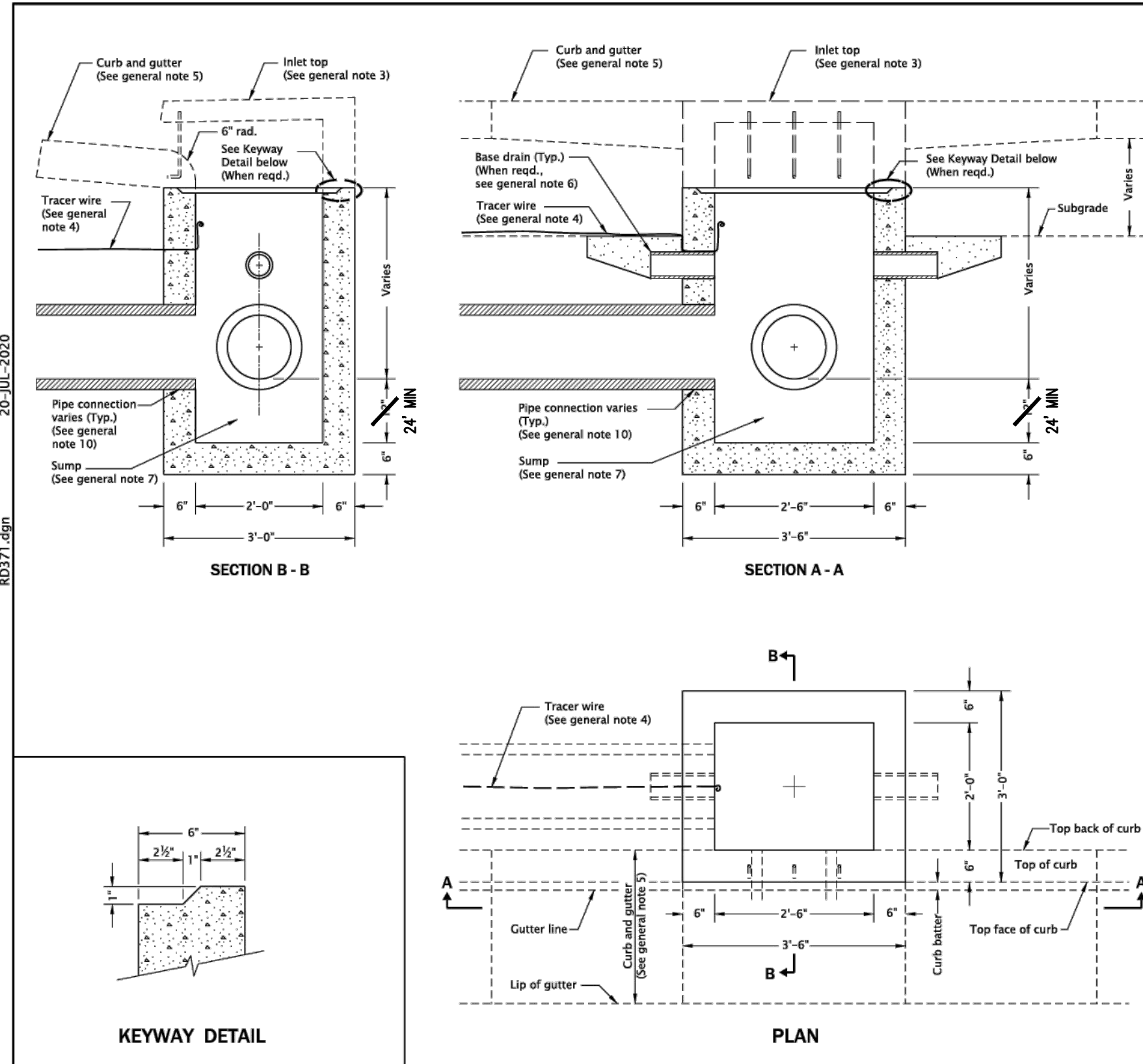
REVISIONS

JOB NUMBER
8970

SHEET

C252

MODIFIED BY AKS



PLAN PAY LIMIT

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

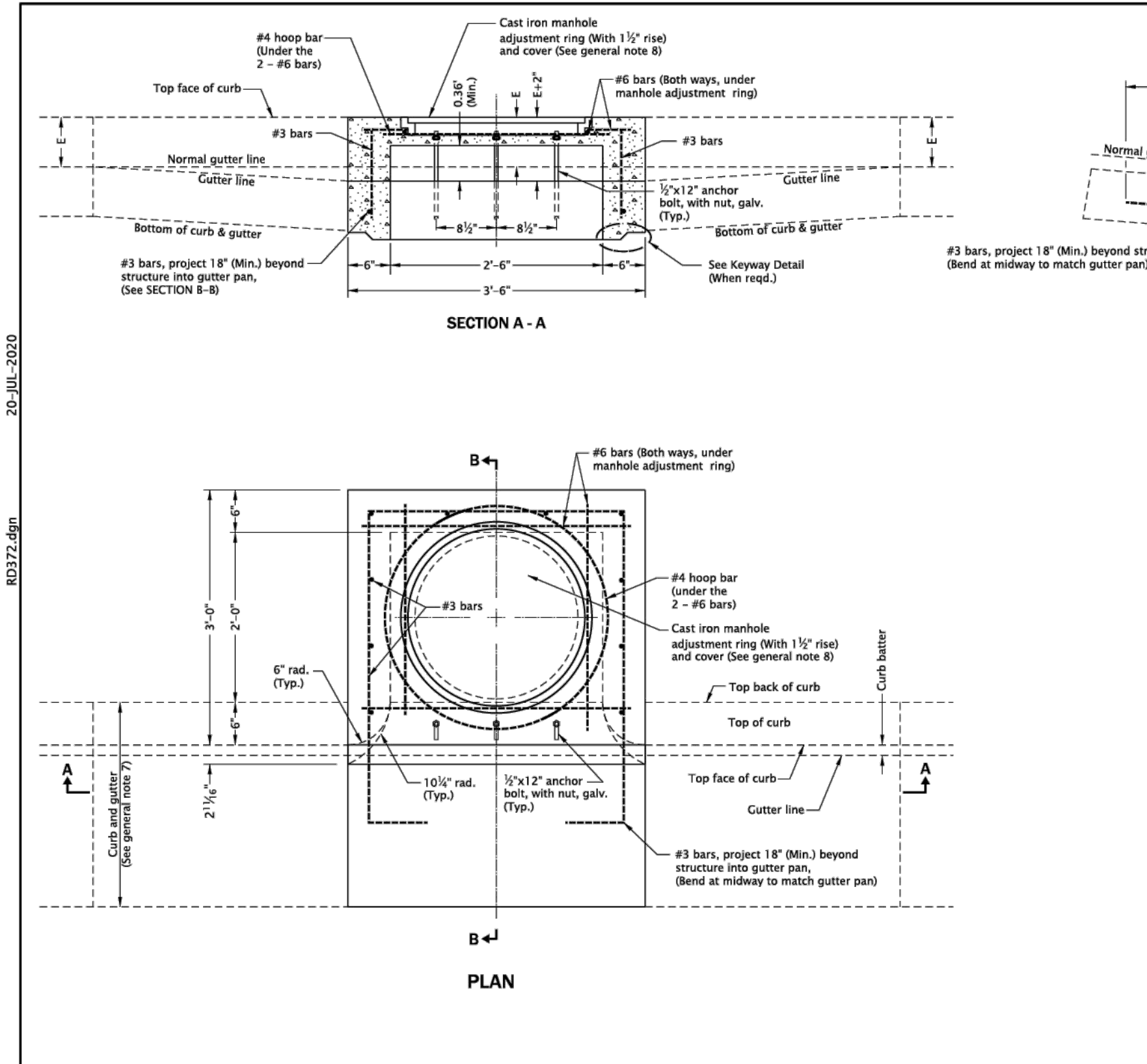
- All concrete shall be commercial grade concrete.
- Inlet base may be cast-in-place or precast. Where precast inlet base is used as an alternate, a 4" compacted leveling bed of sand or 1/4"-0 crushed aggregate shall be provided. All precast inlets shall conform to requirements of ASTM C913.
- See Std. Dwg. RD372 & RD373 for inlet top details.
- See Std. Dwg. RD336 for tracer wire details, or approved alternate.
- See Std. Dwg. RD700 & RD701 for curb and gutter details.
- See Std. Dwg. RD335 for manhole details.
- Provide sump only where shown on plans, and allowed by jurisdiction. For sump details, see Std. Dwg. RD339.
- Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
- Max. pipe diameter varies with pipe material.
- See Std. Dwg. RD339 for pipe to structure connections.

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 first consulting a Registered Professional Engineer.

DATE	2021
REVISION DESCRIPTION	
SCALE	N/A
DATE	21-JUL-2019
RD371	

Effective Date: June 1, 2023 – November 30, 2023

MODIFIED BY AKS



CONCRETE INLET TOP OPTION 1, TYPE CG-3

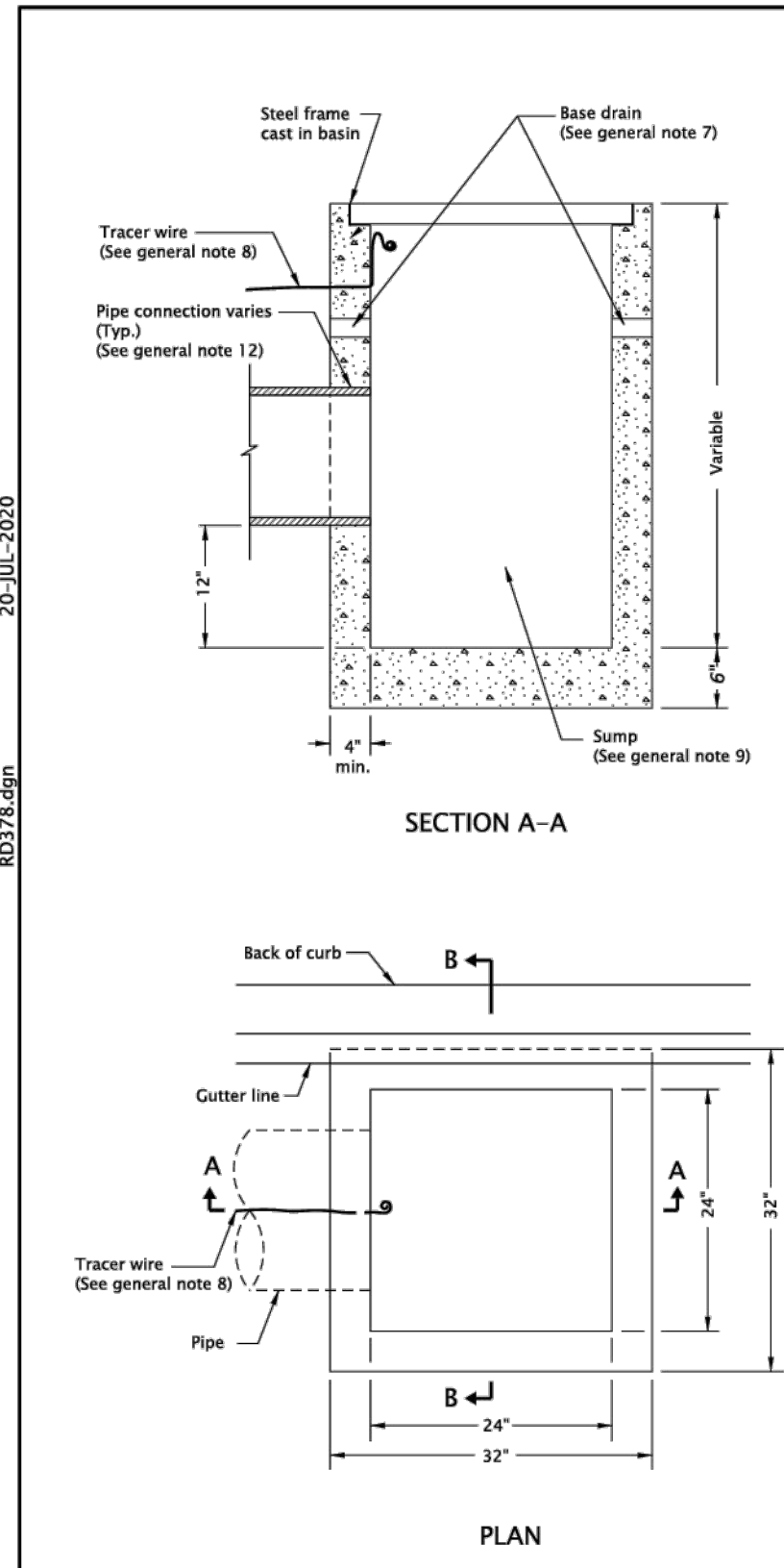
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- All concrete shall be commercial grade concrete.
- Inlet top may be cast-in-place or precast. All precast inlets shall conform to requirements of ASTM C913.
- All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.
- Vary anchor bolt length and reinforcing bar placement as required by curb exposure E (See note 7 below).
- See Std. Dwg. RD371 for inlet base details.
- See Std. Dwg. RD371 for inlet pay limit.
- See Std. Dwg. RD700 & RD701 for curb and gutter details.
- See Std. Dwg. RD335 for cast iron manhole adjustment ring and cover.

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 first consulting a Registered Professional Engineer.

DATE	2021
REVISION DESCRIPTION	
SCALE	N/A
DATE	16-JAN-2019
RD372	

Effective Date: June 1, 2023 – November 30, 2023



TYPE 3 CATCH BASIN, FRAME AND GRATE

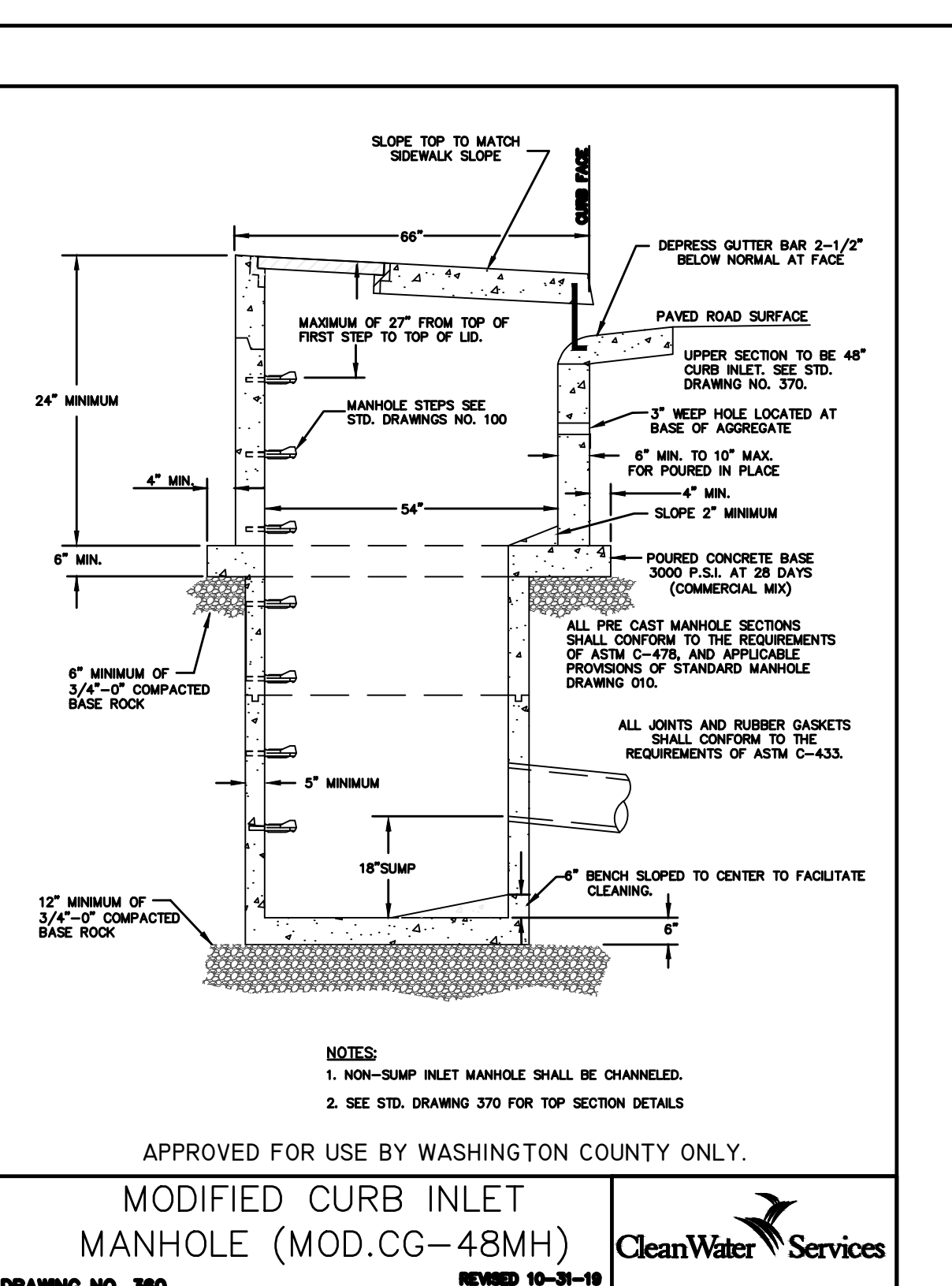
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

- Catch basin & grate shall meet H20 loading.
- All concrete shall be commercial grade concrete.
- Precast walls shall be a minimum of 4" thick.
- For use by local agencies on low volume residential facilities as directed.
- Depress gutter flowline and transition gutter as shown in Std. Dwg. RD366 perspective view.
- Knockouts allowed for precast option.
- If directed, install 3" dia. base drain with field installed mesh screen for subgrade drainage.
- See Std. Dwg. RD336 for tracer wire details, or approved alternate.
- Provide sump only where shown on plans, and allowed by jurisdiction. For sump details, see Std. Dwg. RD364.
- Max. pipe diameter varies with pipe material.
- All precast inlets shall conform to requirements of ASTM C913.
- See Std. Dwg. RD339 for pipe to structure connections.
- See project plans for details not shown.

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 first consulting a Registered Professional Engineer.

DATE	2021
REVISION DESCRIPTION	
SCALE	N/A
DATE	21-JUL-2019
RD378	

Effective Date: June 1, 2023 – November 30, 2023



AKS DRAWING FILE: 8870_C800_DETAILS.DWG | LAYOUT: C253

DESIGNED BY: LAH
DRAWN BY: LAH
MANAGED BY: JAW
CHECKED BY: JPC
DATE: 06/07/2024

REGISTERED PROFESSIONAL ENGINEER
ANGELO NERI
76382PE

OREGON
JULY 29, 2009
JOHN P. CHRISTIANSEN
RENEWAL DATE: 12/31/25

JOB NUMBER
8970

SHEET
C253