

City of Walker
Construction Standards
for
Public Right-of-way and Easements

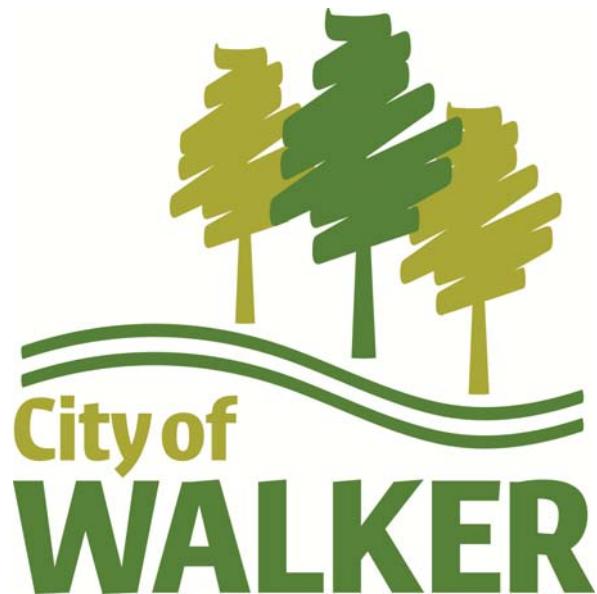


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Section 1: General

Application of Standards

These construction standards are promulgated under Chapter 70, Article II, Section 70-36 of the City of Walker's Code of Ordinances. The City reserves all rights afforded by law to apply these standards, and to provide additional direction as necessary, to work occurring within public right-of-way and public easements under the City's jurisdiction.

External Standards

Unless superseded by the standards in this document, all construction standards, methods, and materials shall be in accordance with current standards as issued by the Michigan Department of Transportation (MDOT), American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), Michigan Manual of Uniform Traffic Control Devices (MMUTCD), and Michigan Occupational Safety and Health Administration (MIOSHA). Additional standards for soil erosion, stormwater, drainage, and the environment are provided in other sections of the City of Walker's Code of Ordinances.

Edits

The City Engineer and Department of Public Works Director are authorized to make edits to this document on an as-needed basis. Notice will be provided to the City Commission prior to material changes.

Variances

Variances from the strict interpretation of these standards may only be granted by a unanimous consensus of the City Engineer and Department of Public Works Director, at their sole discretion. Depending on the specific request, additional applicable City staff may be asked to contribute their expertise. Variance requests must be submitted in writing and prove that all four of the variance requirements are met:

- 1) The presence of peculiar physical conditions not ordinarily existing in similar districts in the City, or due to the business operation of the property served.
- 2) Public safety and convenience will not be adversely affected to an appreciable extent.
- 3) The granting of the variance will not adversely affect the rights of adjacent property owners or tenants.
- 4) Strict application of this article will place an unnecessary hardship on the property owner or tenant.

Construction License

For construction projects, any person performing work within the public right-of-way and/or within public easements shall be licensed with the City of Walker Department of Public Works. For utility projects, both the utility owner and any person performing work within the public right-of-way and/or within public easements shall be licensed with the City of Walker

Department of Public Works. Licenses are valid for the current calendar year and expire on December 31 of each year. See Appendix B for the Department of Public Works license fee schedule.

Insurance

When a project requires a Public Works Permit, a certificate of insurance in the amount of \$500,000 public liability and \$100,000 property damage is required to protect the City of Walker and its agents against any and all claims for damage arising from operations covered by the permit. All insurance policies shall list the City as an additionally insured party. Copies of certificates of insurance shall be filed with the Department of Public Works. Every insurance policy required shall extend for the period to be covered by the permit. The certificate shall provide that the insurance may not be canceled without ten days' written notice to the City.

Performance Security

A performance security is required for all work that occurs within the public right-of-way and public easements. For Public Works Permits, the performance security shall be in the form of a bond. For Soil Erosion and Sedimentation Control Permits and Stormwater Permits, the performance security shall be in the form of a letter of credit. Performance securities are conditioned upon the performance of standards set forth in all contracts, permits, ordinances, standards, construction plans, details, specifications, and any other requirements of law.

Any person performing work within the public right-of-way and/or within public easements is required to register a performance security with the City of Walker Department of Public Works. If a project includes utility work, the utility owner is required to register an additional performance security with the City of Walker Department of Public Works. See Appendix B for the Department of Public Works performance security fee schedule.

If the contractor fails or refuses to carry out any applicable provisions, or if the contractor cannot be located and notified to do so, the City shall have the right to perform or contract any necessary work deemed by the City to be in the best interest of the City. This includes but is not limited to any combinations of the following: making the worksite safe, restoring the worksite to its previous condition, completing a portion of the work, or completing all of the work. The City shall use any and all performance securities available to them to fund this work. The contractor shall reimburse the City for any and all costs incurred by the City that exceed those covered by available performance securities. Additionally, treble damages shall be applied.

If additional permits are required for a project, additional performance securities, in compliance with the specific permit requirements, may be required.

Permits

Public Works Commercial Permit: All commercial, industrial, and office work within public right-of-way or public easements requires a Public Works Commercial Permit. The Department of Public Works is responsible for administering this permit.

Public Works Residential Permit: All residential work within the public right-of-way or public easements requires a Public Works Residential Permit. The Department of Public Works is responsible for administering this permit.

Public Works Utility Permit: All utility work within the public right-of-way or public easements requires a Public Works Utility Permit. The Department of Public Works is responsible for administering this permit.

Telecommunications Permit: All telecommunications work within the public right-of-way or public easements requires a Telecommunications Permit. The Department of Public Works is responsible for administering this permit. Section 8 further outlines the telecommunications permitting process.

Small Wireless Communications Facilities Permit: All small wireless communications facilities work within the public right-of-way or public easements requires a Small Wireless Communications Facilities Permit. The Department of Public Works is responsible for administering this permit.

Soil Erosion and Sedimentation Control Permit: Any earth change activity which disturbs 1 or more acres of land or is within 500' of a lake or stream requires a Soil Erosion and Sedimentation Control Permit. The Engineering Department is responsible for administering this permit.

Stormwater Permit: Any project that involves the addition, modification, or removal of storm sewer requires a Stormwater Permit. Retrofits and redevelopments are required to come into full compliance with current stormwater standards. The Engineering Department is responsible for administering this permit.

Watermain / Sanitary Sewer Permits: The City of Walker is part of a watermain and sanitary sewer utility partnership with the City of Grand Rapids and many other regional partners. Projects that include watermain and/or sanitary sewer work are subject to permitting by both the City of Walker and the City of Grand Rapids. Section 6 contains further information related to watermain project coordination, permitting and inspection. Section 7 contains further information related to sanitary sewer project coordination, permitting and inspection.

Well / Septic System Permits: The Kent County Department of Public Health is responsible for administering well and septic system permits. Coordination with the Walker Community Development Department is required as part of building permit review and issuance.

Building Permit: The Community Development Department is responsible for administering Building Permits. No building permit shall be issued until the roadway frontage for the parcel is accepted into the public system and meets City minimum standards for land use and zoning as per City standards.

The project foreman shall always have a copy of all applicable permits in their possession.

Fee Schedule

The Department of Public Works fee schedule is available in Appendix B.

Notifications

The City may require a permittee to initiate informational meetings, resident and business notifications, and the posting of informational signs, including changeable message boards, for public infrastructure projects. The developer or permit holder shall be responsible for all costs associated with required notifications.

Starting Work

The Department of Public Works (DPW) shall be given 3 business days' notice before any permitted work in the public right-of-way or public easements is started. No street openings shall be started on Fridays, Saturdays, Sundays, any of the City holidays, or on the day before City holidays without approval of the DPW Director. Any deviations from this policy must be approved through the appropriate permitting procedure. In some situations, work may be required to be performed at night or on weekends, at the direction of the DPW Director.

Work Hours

Work hours may be set by the City when it is determined to be in the public interest. Chapter 34, Article IV, Section 34-131(3) of the City's Code of Ordinances prohibits construction noise within 600' of a residence between the hours of 10:00 p.m. and 6:00 a.m. Essential public services are exempt from this requirement.

Traffic Protection

Michigan Department of Transportation standards for signing and flagging construction zones shall be met for all work on public streets and sidewalks. The Contractor shall provide, erect, and maintain all necessary barricades, lights, and warning signs to properly safeguard traffic while work is in progress. All traffic control devices shall conform to standards provided in the Michigan Manual of Uniform Traffic Control Devices.

If a lane or road closure is required, the contractor shall submit the request and a detailed plan to maintain traffic for approval from the City no later than 3 business days prior to the requested lane/road closure start date. For road closures, notice shall be provided to affected motorists, residents, schools, and businesses 3 businesses days prior to closing the road. Additional controls, as noted in the Notifications section, may be required, as directed by the Department of Public Works Director.

If in the opinion of the City, a contractor does not provide adequate traffic controls or does not remove traffic controls for a jobsite when no longer needed, provisions outlined in the Performance Security section shall apply.

Interfering Private Utilities

Any private utilities, above or below ground, interfering with the installation or maintenance of public utilities or improvements in the public right-of-way or public easements shall be relocated to meet current City standards for location, as approved by the City Engineer. The cost for relocation shall be the responsibility of the private utility owner.

Damaged Infrastructure

Public infrastructure damaged by non-City construction processes shall be repaired or replaced as directed by the owner to meet current public standards. Notification shall be provided to the Department of Public Works Director immediately upon discovery of the damage.

Mailbox / Trash / Bus Stop Relocations

If a project interferes with normal mail delivery, trash pick-up, or bus stop locations, the contractor shall make timely arrangements with appropriate agencies to allow for continued operations. This includes, but is not limited to, temporarily relocating facilities to an area which provides reasonable accessible for affected residents. Additionally, all affected residents shall be notified no later than 3 business days prior to the start date of any temporary changes.

Right-of-way / Easement Storage

Storage of construction equipment, construction materials, and excavated materials is not permitted with the public right-of-way or within public easements. Exceptions may be granted for storage within an approved lane closure or permitted work area. Precautions must be taken to prevent equipment and material from interfering with or spilling into a road, sidewalk, trail, drainage ditch, or storm sewer. Excavated material may be relocated to another site within the City only if the site on which the material is being deposited has an active Soil Erosion and Sedimentation Control permit.

Materials and Workmanship

Materials and workmanship shall comply with the criteria set forth in these Construction Standards, City ordinances, and any applicable contracts and permits. In the case of conflicting guidance, the City shall be contacted for clarification. In the case of a missing procedure, applicable Michigan Department of Transportation standards shall apply.

Restoration

Work within the public right-of-way or a public easement shall restore all vegetated (non-pavement) areas impacted by the project within 10 business days of completion. Restoration shall include 4" of topsoil (with no stones greater than 1/2" diameter), MDOT Class A seed, fertilizer, and mulch, utilizing the hydroseed method. For slopes 1 on 3 and greater, erosion control blanket is required. Erosion control blanket is not permitted for slopes less than 1 on 3. Loose straw is not permitted anywhere. When required, watering shall be the responsibility of

the property owner or resident. Watering and care directions should be provided to adjacent property owners. Acceptance of restoration work is subject to the City's approval.

Safety

All work in public right-of-way and public easements shall comply with current Michigan Occupational Safety and Health Administration standards.

Easements

All new easements associated with public infrastructure projects are required to be recorded with the Kent County Register of Deeds. A drawing of the easement location must be attached to the legal description. The City shall be provided with copies of all recorded easement.

As-builts

An electronic .pdf as-built plan shall be submitted to the Engineering Department upon completion of a public infrastructure project. The as-built shall contain the original City approved design, sealed by the design engineer, with annotations showing any variations from the original design. Furthermore, the as-built shall contain an information block identifying the plan as an as-built, the date of the as-built, the name of the company responsible for the design, the name of the contractor company, the name of the inspection company, the name of the company that provided the as-built measurements, and the name of the company that drafted the as-built. Performance securities are subject to holding until such time that proper as-built plans are provided.

Truck Route

Vehicles over 10,000 lbs. must follow the City's truck route system. Any deviations from this policy must be approved by the Department of Public Works. The City's truck route map is provided in Appendix C. Local deliveries off the truck route should utilize a hierarchy of roads, with major roads first, then local roads, then private roads (if permission by the private road owner is granted).

Overweight/Oversized Vehicle

All overweight/oversized vehicles shall contact the Department of Public Works prior to operation on City streets.

Section 2: Streets

Design Standards

Unless superseded by the standards in this document, all streets shall be designed to meet the current technical standards outlined by the Michigan Department of Transportation (MDOT), American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

A factor of safety shall be included in the design of all new roads and major road alterations. This shall be accomplished by utilizing a minimum design speed of 5 mph above the speed limit that will be posted. Recognizing the importance of the design speed in providing a factor of safety for roadway users, future reviews of posted speed limits should continue to provide for this factor of safety allowance.

A minimum of 50' is required between each vertical curve.

Frontage Improvements

Parcels located on City streets with an existing agricultural street cross-section will be required to update their street frontage to meet improved street cross-section standards when they are developed. This may include road widening, storm sewer, curb and gutter, and sidewalk consistent with the standards in Appendix A. The City Engineer will be responsible for specifying required improvements.

Single family residences are exempt from this requirement, unless they are located within a plat or site condominium.

Grading and Paving

All grading and paving work within the public right-of-way and public easements shall comply with the City's Details (Appendix A).

Pavement shall be placed 1/4" higher than the edge of the gutter pan. Manholes shall be placed 1/8" to 1/4" lower than the adjacent pavement.

Curb cuts are not allowed without an appropriate DPW Permit. Horizontal and diagonal saw cuts in curbs are prohibited.

All asphalt paving and concrete work shall cease by November 15. No asphalt paving work shall be conducted in the rain or when temperatures are less than 40°F and rising. Any deviations will require special approval by the Department of Public Works Director and City Engineer.

Open Cuts

Once open cut, there shall be continuous work, making every effort to restore the road promptly. The time allowed for an open cut shall be indicated on the appropriate permit. Any deviations from this timeline will require approval by the DPW Director. For work not completed within the permitted schedule, fines will be assessed according to the fee schedule provided in Appendix B.

No open cuts will be permitted within the first 5 years of a road receiving a surface treatment. No open cuts will be permitted after November 1.

When requested, the contractor may be required to provide density tests for restoration of open cuts.

Pavement Restoration

Pavement patches shall meet the current full-depth cross-section standards.

Restoration shall cover the full-length of the trench and continue to the next lane-line beyond the impacted area. Restoration shall extend at least 6" wider than the width of the trench, with a minimum total width of 36".

Restoration shall result in a rectangular-shaped patch. Other geometric shapes are not permitted.

Pavement restoration for open cuts and other necessary pavement repairs shall utilize clean, straight lines. A saw cut method shall be utilized to provide vertical edges. Right angle transitions shall be used between transverse and longitudinal cuts. All joints shall be sealed.

Street Markings

Street markings shall be in conformance with the Michigan Manual of Uniform Traffic Control Devices. Plans and materials are subject to approval by the Department of Public Works.

Waterborne paint shall be used in the application of all street markings.

Additional applications of pavement markings may be required if prior applications show signs of excessive fading within 2 months of the latest application.

Street Signs

Street signs shall be in conformance with the Michigan Manual of Uniform Traffic Control Devices. Plans and materials are subject to approval by the Department of Public Works.

All newly installed signs shall meet current retroreflective standards. All newly installed posts shall meet current break-away standards.

If work requires the removal of street signs, the signs shall be replaced upon completion of the work, assuming the signs are still applicable.

Where roadways remain open to traffic during construction, all statutory signs shall remain in place throughout construction.

All new school zones speed limit signs shall include flashing beacons. School zone speed limits and flashing beacon timing shall be consistent with Michigan Vehicle Code Standards (MCL 257.627a).

Traffic Signals

The City of Grand Rapids is under contract with the City of Walker to operate and maintain the City's traffic signals. Any work affecting traffic signals should be coordinated with the Walker Engineering Department who will then coordinate with the City of Grand Rapids.

The City has a Mast Arm Traffic Signal Policy. Mast arms are required whenever a signal is upgraded or replaced. Mast Arm Construction Standards, and a LED Street Name Sign Detail are provided in Appendix D.

Street Lights

Consumers Energy operates a majority of the street lights located within the City. Street lights attached to a mast arm traffic signal pole are operated by the City. Street lights on Weatherford Drive are also operated by the City. The pedestrian sidewalk lights in Standale are operated by the Standale Downtown Development Authority and maintained by the Department of Public Works. Any work affecting street lighting should be coordinated with the appropriate agency.

Street lights are required in new residential developments. The City shall cause Consumers Energy to design and install street lights after residential home construction has begun. The cost of street light installation shall be covered by the construction inspection escrow.

Street lights are generally encouraged at curves and intersections on streets with new industrial, commercial, and office developments.

When feasible, street lights should be placed within the parkway on common property lines.

Public Streets

Public streets located within commercial plat and site condominium developments shall, at a minimum, be constructed to the City's Commercial Street detail.

Public streets located with residential plat and site condominium developments shall, at a minimum, be constructed to the City's Residential Street detail.

Private Streets

Private streets located within site condominium and condominium developments shall, at a minimum, be constructed to the City's Agricultural Street with Valley Gutter detail. Sidewalk may be required. A minimum building setback of 25 feet from the back of the sidewalk (or in cases where there is no sidewalk, the back of the road edge) to the front of the garage is required.

Private streets that are not part of a site condominium or condominium development shall, at a minimum, be constructed to the City's Agricultural Street detail. Sidewalk may be required. A minimum building setback of 25 feet from the back of the sidewalk (or in cases where there is no sidewalk, the back of the road edge) to the front of the garage is required.

Private streets will not be accepted into the public system. This is because private streets are not subject to the same inspection and testing requirements of a public street when constructed.

Section 3: Driveways

Details

Standard details for commercial, residential, and agricultural driveways can be found in Appendix A.

Commercial Driveways

Plans

Two sets of driveway plans shall accompany the Public Works Commercial Permit application, as outlined in Section 1. The plans shall be legibly drawn at a scale that is a multiple of 10. Plans must include adequate details to be surveyed and inspected in the field by City staff and consultants, including ADA ramp grades and dimensions.

Location

Driveways shall be located so that no undue interference with the free movement of traffic on the adjoining street will result. Driveways shall also be located to provide the best possible vision and grade conditions.

For streets with a speed limit 25 mph or under, no portion of a commercial driveway shall be located closer than 90' from the edge of the driveway to the nearest right-of-way line of a street intersection (public or private). For streets with a speed limit greater than 25 mph, driveway locations will be reviewed on a case by case basis to ensure that the proposed distance from adjacent driveways and rights of way are reasonable for the existing speed limit. A traffic impact analysis may be required based on the roadway's traffic load, proposed traffic generation, and proximity to adjacent public intersections. The City Engineer should be engaged early in this process to incorporate institutional knowledge of the area into the review process.

No portion of two commercial driveways serving the same property shall be located closer than 90', when measured along the public right-of-way line. Unless written permission is obtained from adjacent property owners and City approval is granted, no portion of a commercial driveway shall extend beyond adjacent property lines as extended to the edge of the adjoining street.

Angled Driveways

Angled driveways are not allowed in the public right-of-way. All driveways must have a 90° connection to the roadway. Deflections from perpendicular may occur outside the right-of-way.

Profile

All driveways shall be built to the sidewalk elevation at the public right-of-way line, as determined by the City. The grade of the driveway within the right-of-way should be no greater than 4%. Deviations may be allowed if the terrain requires, but in no case shall the grade exceed 8%.

Drainage

Driveways shall be constructed so that the drainage of the adjoining street is not adversely affected, and the drainage of adjacent areas is not negatively altered. Culverts, where required by the City, shall be installed at no expense to the City. Standards for culverts are found in Section 5.

Surface

All driveways shall be paved with hot mix asphalt or concrete within the public right-of-way, in a manner that is consistent with City standards.

Concrete Curb

The standard commercial curb and gutter is Michigan Department of Transportation F4 Modified. See Appendix A for specific requirements.

Driveway and Sidewalk Staking

Construction stakes to ensure the proper location and elevation of new driveways and sidewalks shall be placed by the developer, in accordance with the City accepted site plan. Prior to surfacing, the developer shall contact the Public Works Department to schedule a form inspection. Form inspection acceptance does not guarantee final acceptance. The developer is responsible for ensuring proper grading and installation, in accordance with the City accepted site plan and all applicable construction standards, before final acceptance of new driveways and sidewalks will be granted.

Joint Driveways

When both property owners abutting a common property line are in agreement, they may construct a joint commercial driveway. The joint driveway shall comply with these standards as if the frontage were under a single ownership. Cross access easements from each property owner shall be required for a joint driveway to be approved by the City.

Residential Driveways

Plans

One set of driveway plans shall accompany the Public Works Residential Permit application. The plans shall be legibly drawn with dimensions.

Angled Driveways

Angled driveways are not allowed in the public right-of-way. All driveways must have a 90° connection to the roadway. Deflections from perpendicular may occur outside the right-of-way.

Location

Driveways shall be located so that no undue interference with the free movement of traffic on the adjoining street will result. Driveways shall also be located to provide the best possible vision and grade conditions.

For streets with a speed limit of 25 mph or under, no portion of a residential driveway shall be located closer than 60' from the edge of the driveway to the nearest right-of-way line of a street

intersection (public or private). For streets with a speed limit greater than 25 mph, driveway locations will be reviewed on a case by case basis to ensure that the proposed distance from adjacent driveways and rights of way are reasonable for the existing speed limit. A traffic impact analysis may be required based on the roadway's traffic load, proposed traffic generation, and proximity to adjacent public intersections. The City Engineer should be engaged early in this process to incorporate institutional knowledge of the area into the review process.

No portion of two residential driveways serving the same property shall be located closer than 40' when measured along the public right-of-way line. Unless written permission is obtained from adjacent property owners and City approval is granted, no portion of a residential driveway shall come within 1' of the adjacent property lines.

Number of Driveways

One driveway is permitted for the first 100' or less of frontage. Circle drives or secondary drives may be permitted if the frontage exceeds 100' and all other rules are satisfied.

Profile

All driveways shall be built to the sidewalk elevation at the public right-of-way line, as determined by the City. The grade of the driveway within the right-of-way should be no greater than 5%. Deviations may be allowed if the terrain requires, but in no case shall the grade exceed 10%.

Drainage

Driveways shall be constructed so that the drainage of the adjoining street is not adversely affected and the drainage of adjacent areas is not negatively altered. Culverts, where required by the City, shall be installed by the City at no expense to the City. Standards for culverts are found in Section 5. See the fee schedule in Appendix B for the price of a standard culvert.

Surface

All driveways shall be paved within the public right-of-way and 5' behind any sidewalk or bike path.

Concrete Curb

The standard residential curb and gutter is Michigan Department of Transportation F4 Modified. The standard agricultural curb and gutter is a hot mix asphalt valley curb and gutter. See Appendix A for specific requirements.

Driveway and Sidewalk Staking

All stakes for location and elevation necessary for driveway and sidewalk construction shall be placed by the City's consulting engineer per the developer's provided background survey data and driveway design. The Public Works permit covers the cost of one staking. If more than one staking is required, an additional fee as outlined in the fee schedule in Appendix B will apply.

Joint Driveways

Joint residential driveways are not permitted.

Service Driveways

Service driveways provide low usage vehicular access to vacant parcels, sheds, barns, utility structures, and similar types of facilities. All service driveways are subject to the standard detail requirements for drive approaches as outlined in Appendix A. However, when located on an agricultural street, the service drive approach may be surfaced with crushed concrete, asphalt millings, stone, or any other pervious material that is dustless, durable, and non-erodible. Gravel is not permitted. When located on a residential or commercial street, the service drive approach must be hard surfaced (concrete or asphalt) per the standard details in Appendix A.

Section 4: Sidewalks and Trails

Grading and Paving

All grading and paving work within the public right-of-way and public easements shall comply with the City's Details (Appendix A).

All asphalt paving and concrete work shall cease by November 15. No asphalt paving work shall be conducted in the rain or when temperatures are less than 40°F and rising. Any deviations will require special approval by the Department of Public Works Director.

Curb Ramp Installation

The City follows Michigan Department of Transportation Standard Plan R-28 for curb ramp installation. Standard red plastic detectable warning plates that meet MDOT and ADA specification shall be utilized throughout the City.

Sidewalk curb ramps in new neighborhoods shall be installed by the developer when the road is constructed. The contractor is responsible for compliance with all standards. Any deviations from current ADA standards shall be removed and replaced at the contractor's expense.

Restoration

When construction removes existing sidewalk, trail, and/or curb ramp, the restoration of such areas is to be done to current City and ADA standards. The contractor is responsible for compliance with all standards. Any deviations from current ADA standards shall be removed and replaced at the contractor's expense.

Sidewalk Location and Width

All sidewalks shall be constructed following a linear path 1' to the inside of the right-of-way line. Deviations from a straight path require approval from the City Engineer.

In areas where a deviation is considered, the width of a sidewalk shall be 5' with a minimum parkway width of 5'. If the 5' minimum parkway width cannot be achieved, an 8' sidewalk from the back of the curb may be permitted for short distances. The primary purpose for sidewalk location deviations is to minimize wetland crossing areas and/or the need to use bridges.

Crosswalk Markings

Crosswalk markings shall be in conformance with the Michigan Manual of Uniform Traffic Control Devices.

Continental crosswalk markings shall be used at all major street crossings.

If work requires the removal of crosswalk markings, the markings shall be replaced upon completion of the work, assuming they are still applicable.

Pedestrian Signals

The City of Grand Rapids is contracted for operating all of the City's pedestrian signals. Any work affecting traffic signals should be coordinated with the Walker Engineering Department who will then coordinate with the City of Grand Rapids.

Trail Signs and Markings

Trail signs and markings shall be subject to approval by the City Engineer.

If work requires the removal of trail signs or markings, the signs and markings shall be replaced upon completion of the work, assuming they are still applicable.

Section 5: Stormwater Drainage

Storm Sewer

All storm sewer work within the public right-of-way and public easements shall comply with the standards outlined in this document and Chapter 67 of the City's Code of Ordinances.

Only ASTM C-76 Class III concrete pipe shall be allowed under roadways in the public right-of-way.

Design flow in storm sewer shall not be less than 3 ft/s nor greater than 10 ft/s.

Ditches

Property owners/residents shall keep all ditches mowed and clear of debris.

Ditches provide stormwater detention and may not be enclosed with pipe without a stormwater permit.

Culverts

A steel corrugated metal pipe may be installed in areas where a driveway intersects a drainage ditch along an agricultural section of road.

In agricultural areas, culvert sizes will typically be determined by the Department of Public Works. In improved areas, requests for new culverts will require a stormwater permit and formal design by a professional engineer.

Repairs

Any repairs to storm sewer pipe shall be conducted using like materials and from the closest joint, or as authorized by the Department of Public Work (DPW) Director. All repairs are subject to permitting and inspection by the DPW. Changes in size or grade will be subject to stormwater permitting.

Sump Pumps

Sump pumps may discharge water overland or tie-in to the storm sewer system. Refer to Sections 67-19, 18-110.29, and 18-33 of the Walker Code of Ordinances for discharge location and backflow prevention regulations.

Objects in Drainage Areas

Section 67-23 of the Walker Code of Ordinances outlines which objects are allowed in the various types of drainage areas.

Illicit Discharges and Connections

Section 67-21 of the Walker Code of Ordinances outlines prohibited discharges and connections.

Section 6: Watermain

Watermain

The City of Walker is part of a utility partnership with the City of Grand Rapids and many other regional partners. New public watermain must be processed through the City of Walker Engineering Department and eventually routed through the City of Grand Rapids for approval. Inspection of new watermain will be performed by Walker in accordance with the Grand Rapids 1993 specifications book, and subsequent revisions.

Individual watermain connections will require permits from both Grand Rapids and Walker. Grand Rapids oversees the water service up to the home/building. Walker performs the internal plumbing inspections through the Community Development Department as part of a plumbing permit.

Section 7: Sanitary Sewer

Sanitary Sewer

The City of Walker is part of a utility partnership with the City of Grand Rapids and many other regional partners. New sanitary sewer lines must be processed through the City of Walker Engineering Department and eventually routed through the City of Grand Rapids for approval. Inspection of new sewer lines will be performed by Walker in accordance with the Grand Rapids 1993 specifications book, and subsequent revisions.

Individual sanitary sewer connections will require permits from both Grand Rapids and Walker. Grand Rapids oversees the sewer lateral up to the home/building. Walker performs the internal plumbing inspections through the Community Development Department as part of a plumbing permit.

Section 8: Private Utilities

Installation

Structures shall be placed under pavement by boring and jacking, directional boring, or cutting through the pavement and using an open trench. The specific installation method of a private utility shall be subject to approval by the Department of Public Works Director. Tunneling will not be permitted.

Removal of concrete pavements shall be done only with concrete saws and chisels operated by hand or compressed air. Pavement crushers of any type are prohibited. When openings are 3' or less from expansion or construction joints, the pavement shall be removed to the nearest joint.

Pavement restoration shall comply with the specifications outlined in Section 2.

Boring Operations

The method of boring and jacking to be used shall be approved by the Department of Public Works (DPW) before work is started.

All borings must be a minimum of 48" below the road surface, as measured from the bottom of the curb, and must begin at least 5' from the edge of the road. For borings outside the roadway, the minimum bore depth is 36".

Notice as outlined in Section 1 is required for all boring and jacking operations 6" and under in diameter. All bores over 6" in diameter require a full set of plans and 2 weeks for City Engineer review and approval before work may begin.

Deviations in alignment must be approved in advance by the DPW Director.

Open Trenches

Open trenches shall conform to current Michigan Occupational Safety and Health Administration regulations.

Shoring and bracing shall be used for all trenches where necessary to protect the safety of workers, to protect the road surface adjacent to the trench, to safeguard other infrastructure, and to prevent property damage.

Backfill

Backfilled trenches within the traveled portion of the public right-of-way shall meet either the preexisting cross-section or the current City detail and specifications, whichever is greater.

Backfill in right-of-way shall be Class II material only. In any easement, Class II material shall be used 2' above the pipe.

Compaction shall be subject to check by an independent testing contractor.

All material excavated from the trench and not used in the backfill shall be hauled away to a suitable and permitted site.

Temporary Crossings and Wearing Surfaces

Temporary crossings shall be provided over open trenches. Temporary wearing surfaces shall be placed over backfilled trenches to keep traffic moving or to furnish access to an abutting property.

Temporary crossings and wearing surfaces must be restored to final cross-section standards as outlined in Appendix A as soon as possible.

Limitations may be put in place by the Department of Public Works Director regarding the type and duration of temporary crossings and wearing surfaces.

Replacing Paving Surfaces

A permanent wearing surface of bituminous material shall be placed over trenches on all asphalt surfaced roads. The thickness shall be equal to the depth of the preexisting paving surface or the City's current detail, whichever is greater. All pavement restoration specifications as outlined in Section 2 shall be followed. Submittal of a material list and notice as outlined in Section 1 is required for Department of Public Works (DPW) Director approval.

If patching occurs in the winter, a temporary patch of asphalt or concrete may be allowed, but it must be approved by the DPW Director and replaced with material to match the final cross section no later than June 1.

Permanent wearing surfaces on concrete surfaced roads shall be new concrete pavement of the same type and thickness as the original pavement. Whenever reinforcing steel is removed, it shall be replaced.

All permanent wearing surfaces shall be placed by the project owner at their own expense.

Private Utility Locations

All utilities shall be located as shown in the City's detail (Appendix A) and/or as directed by the Department of Public Works.

Pipes shall be placed at a depth that will provide no less than 4' of cover between the top of the roadway surface and the top of the pipe.

If at any time the position of an electric, gas, telephone, cable, or telecommunications utility facility interferes with improvements to a street, sidewalk, trail, storm utility, sanitary utility, or

watermain utility, it shall be the responsibility of the utility owner to move the facility to a location satisfactory to the City. Utility relocations shall be done in advance of City work and at the expense of the utility owner.

All private utility companies, including, but not limited to electric, gas, telephone, cable, and telecommunications, shall provide the Engineering Department with a GIS shape file that contains location data for all the private utilities' underground infrastructure located within the public right-of-way and public easements. Updated GIS shape file inventories are due annually on July 1. All private utility companies shall also provide the Department of Public Works with up-to-date contact information for private utility as-builts and field location services.

Telecommunications

Private utility companies applying for Metro Act permitting in the public right-of-way should provide detailed construction plans that include existing conditions, topography, and surrounding public and private utilities. The plans should have enough detail to confirm that adequate capacity exists for existing and future public utilities in the public space.

No fees will be charged for other required permits as the cost is already included in the Metro Act application fee.

Section 9: Environmental

Soil Erosion and Sedimentation Control Standards

All work occurring within the public right-of-way and public easements shall meet current Michigan Department of Environment, Great Lakes, and Energy (EGLE) and City standards.

Any earth change activity within the City of Walker shall control soil erosion and protect adjacent properties and waters of the state from sedimentation in accordance with Part 91 of the Natural Resources and Environmental Protection Act (NREPA) and Chapter 34, Article VI of the Walker City Code. The City of Walker is a Municipal Enforcing Agency (MEA) and assumes responsibility for administering and enforcing Part 91 within City limits.

Any earth change activity which disturbs 1 or more acres of land or is within 500' of a lake or stream shall obtain a Soil Erosion and Sedimentation permit from the City of Walker. Any project disturbing five acres or greater must receive a Notice of Coverage (NOC) from EGLE immediately after the City of Walker issues the local Soil Erosion permit.

Prohibitions for Stormwater Quality

Coal Tar

The use of coal tar emulsions is prohibited. If the ingredient list includes coal tar, the substance is not permissible.

Concrete

The discharge of wastewater associated with concrete clean-out via overland flow or direct discharge to any catch basin, storm sewer, drainage ditch, or surface water is prohibited. Concrete wastewater is defined as water generated during cutting, grinding, drilling, or hydrodemolition of concrete.

Fertilizer

The use of fertilizers containing phosphorous is prohibited without a soil test confirming the need for phosphorous enrichment.

Dewatering

Discharge from groundwater dewatering activities must have all sediment removed prior to leaving the project site. Any unidentified substances in the water must be identified and Due Care practiced as outlined in Section 20107a of Part 201 of the NREPA until the substance can be identified and appropriate countermeasures are in place.

Trenchless Installation

All trenchless installation, also known as bore and jack operations, must have a dewatering plan and properly clean up all operation byproducts. This includes removing any material from the public right-of-way. It is strictly prohibited to discharge any substance other than clean water from the project site. Refer to the dewatering guidelines outlined above.

Section 10: Miscellaneous

Guardrail

Guardrail within the public right-of-way or within public easements must be designed by a Professional Engineer and accepted by the City Engineer. American Association of State Highway Transportation Officials and Michigan Department of Transportation standards shall be utilized to justify the necessity and design of all guardrail.

Retaining Walls

Retaining walls within the public right-of-way or within public easements must be designed by a design professional and accepted by the City Engineer. Wood retaining walls are not permitted. Fencing may be required for fall protection as needed to comply with current building code.

Tree Plantings

Any person wishing to plant a tree in the public right-of-way shall comply with the City's Street Tree Planting Specifications (Appendix E).

The City reserves the right to trim or remove trees planted in the public right-of-way and public easements in order to maintain clear vision requirements and/or reduce interference with the sidewalk or underground utilities. Trees affected by street maintenance operations will not be replaced.

Objects in the Public Right-of-Way and Public Easements

Mailboxes and sprinkler systems are the only objects allowed in the public right-of-way and public easements.

Mailboxes shall meet current United States Postal Service standards. If mailboxes are damaged by snow from snow plowing operations, any required repairs shall be at the property owner's expense. If mailboxes are damaged by an equipment strike from City snow plowing operations, the property owner may contact the Public Works department to discuss repair or replacement options, in accordance with current City policy.

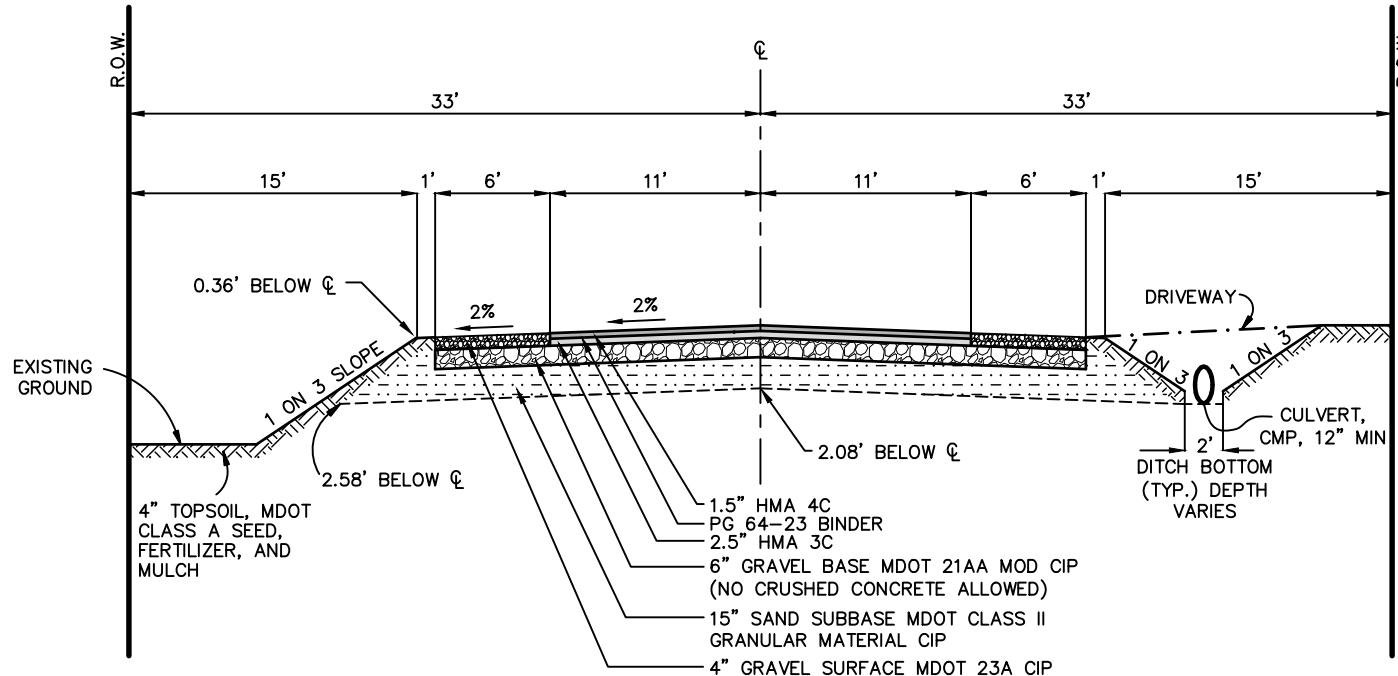
Sprinkler operations shall be conducted in a manner that does not inconvenience pedestrian and/or vehicular traffic. If a public infrastructure project interferes with an existing sprinkler system in the public right-of-way or public easement, any required relocations and/or repairs shall be at the property owner's expense. If sprinklers are damaged by City snow plowing operations, any required repairs shall be at the property owner's expense.

Items prohibited in the public right-of-way and public easements include, but are not limited to basketball hoops, advertising signs, boulders, rockscaping, vehicles, and objects that interfere with clear vision requirements. Fences are also prohibited in the public right-of-way and public

easements, except when required for fall protection. When required, only black vinyl coated chain link fences shall be allowed.

Appendix A

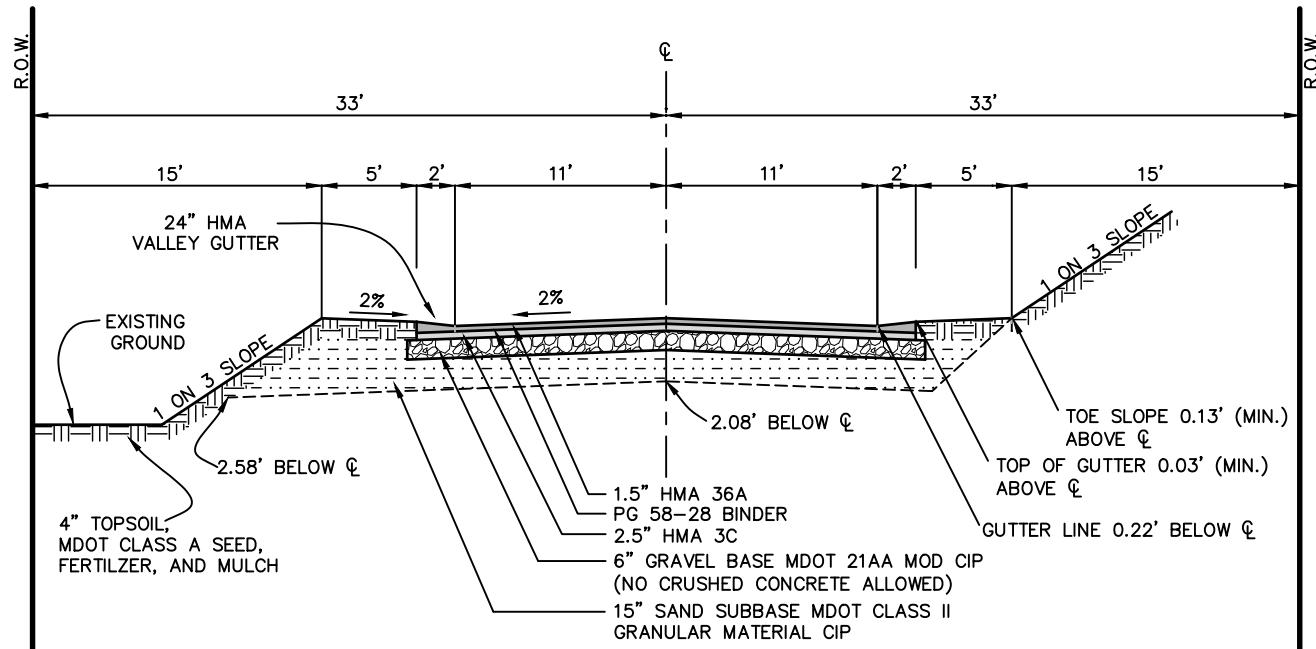
Details



NOTES:

1. MAXIMUM ROAD GRADES ARE 6% FOR MAJOR STREETS AND 7% FOR LOCAL STREETS.
2. TOPSOIL TO BE SCREENED WITH NO STONES GREATER THAN $\frac{1}{2}$ " DIAMETER.
3. EROSION CONTROL BLANKET REQUIRED ON ALL SLOPES 1 ON 3 AND STEEPER.





NOTES:

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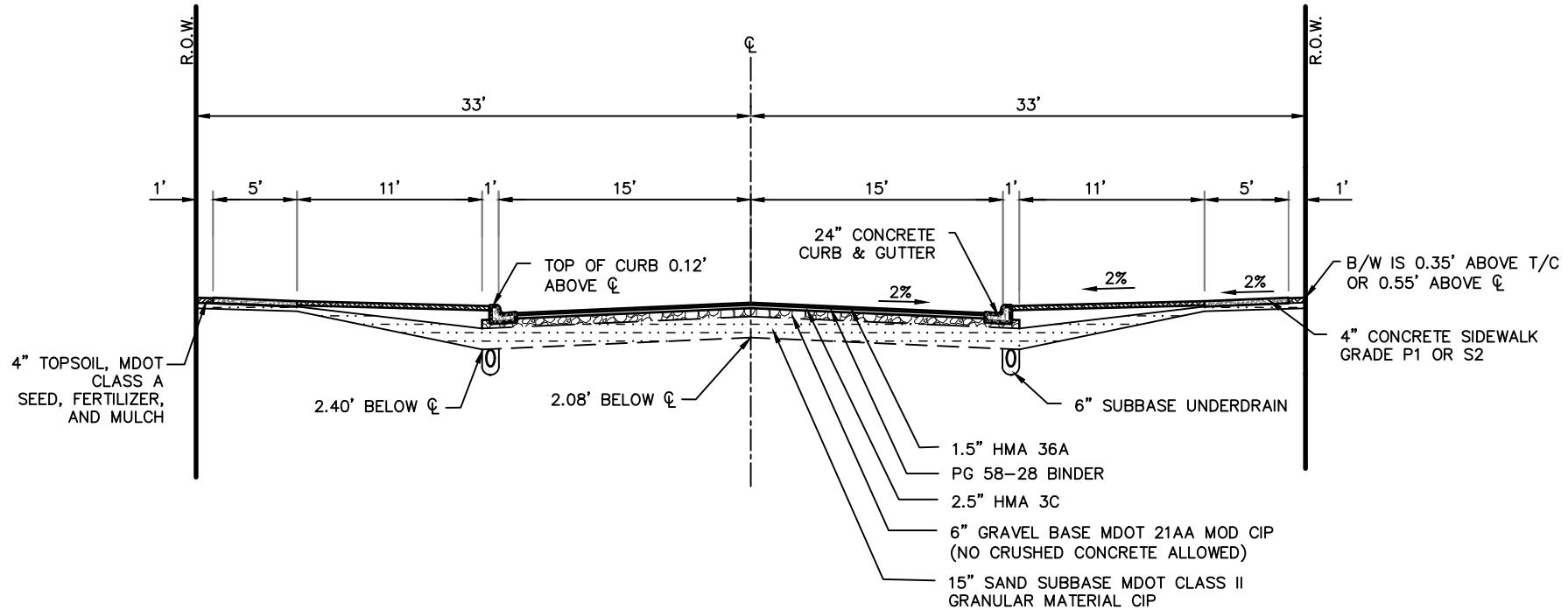


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 **Moore+Bruggink**
 Consulting Engineers
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 (616) 362-9801 mailbox@mbe.com

DATE: AUGUST 4, 2020

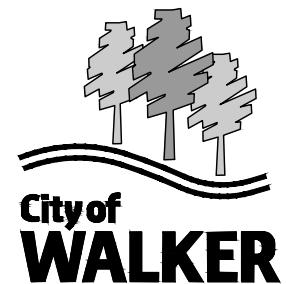
AGRICULTURAL STREET
w/VALLEY GUTTER

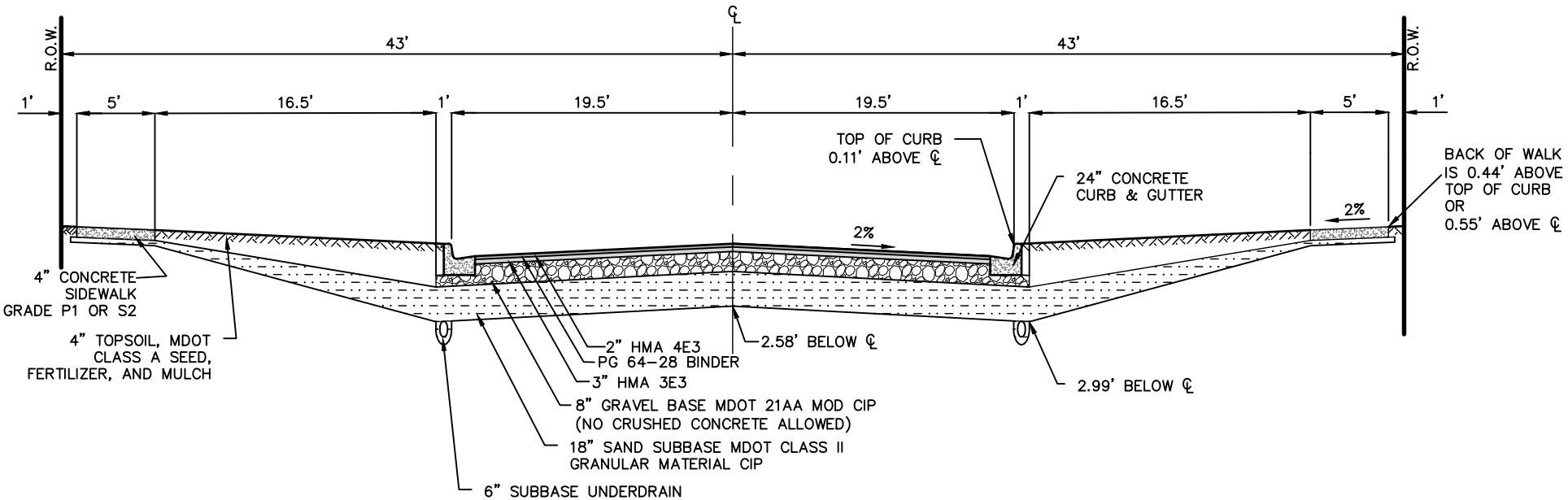
SHEET NUMBER

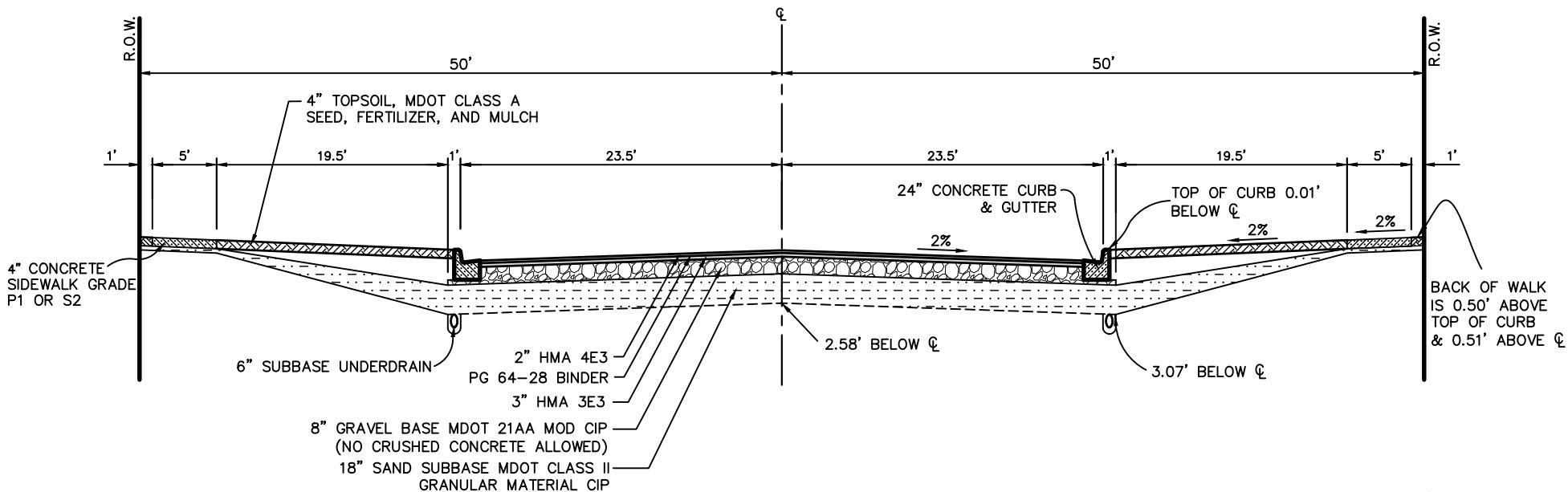


NOTES:

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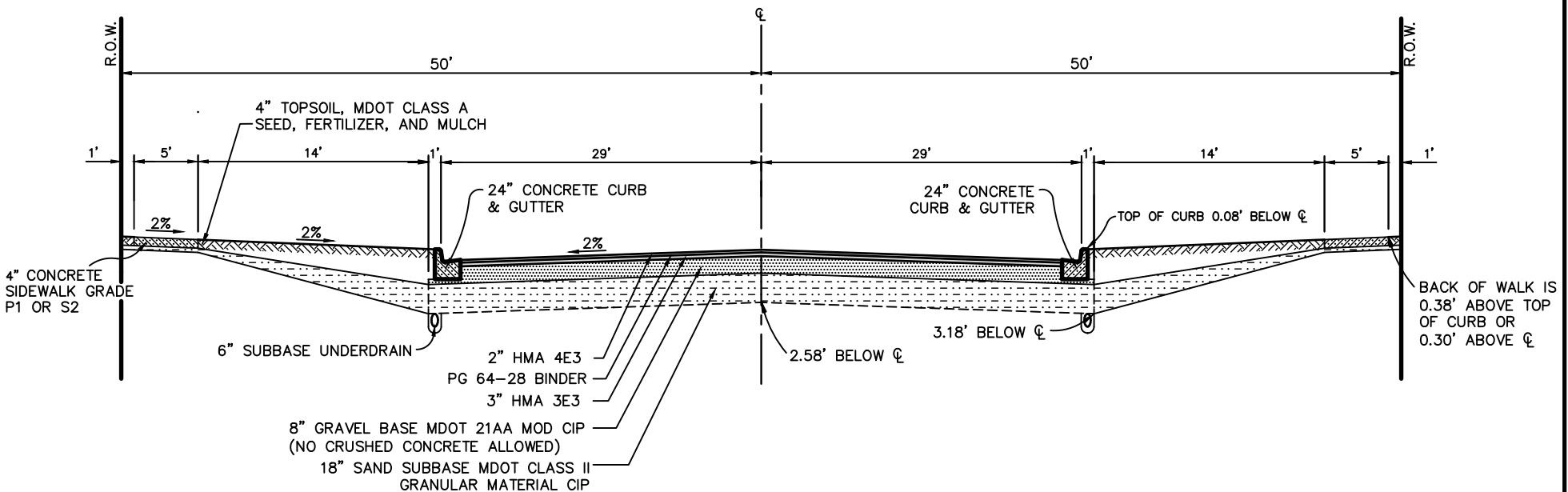




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3. EROSION CONTROL BLANKET REQUIRED ON ALL SLOPES 1 ON 3 AND STEEPER.
4. HMA THICKNESS MAYBE INCREASED BASED ON PAVEMENT DESIGN





NOTES

- NOTES:

 1. MAXIMUM ROAD GRADES ARE 6% FOR MAJOR STREETS AND 7% FOR LOCAL STREETS.
 2. TOPSOIL TO BE SCREENED WITH NO STONES GREATER THAN $\frac{1}{2}$ " DIAMETER.
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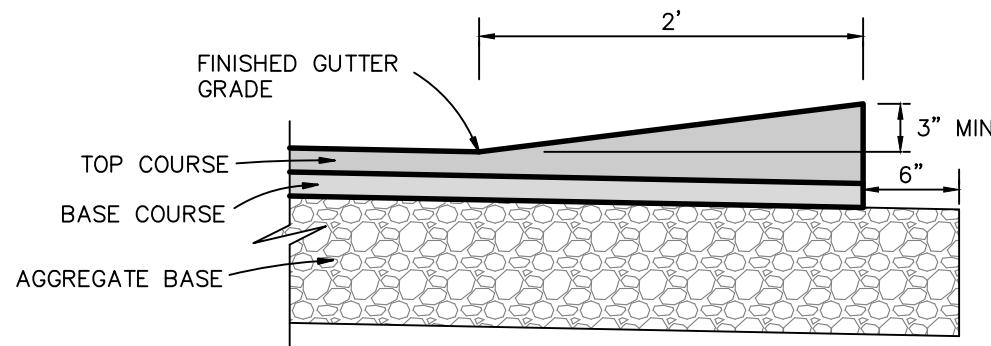


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DATE: AUGUST 4, 2020

MAJOR STREET FIVE LANE

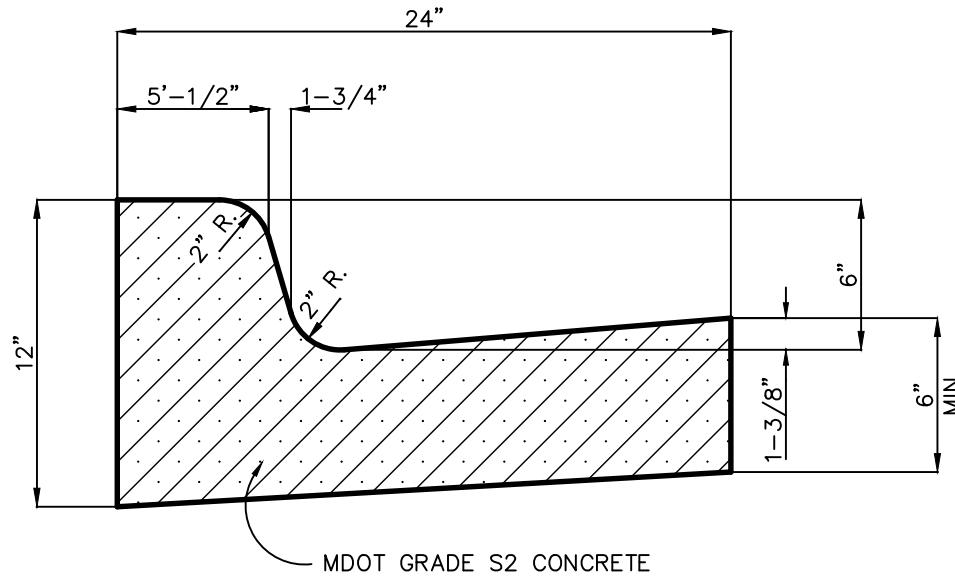
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NOTES:

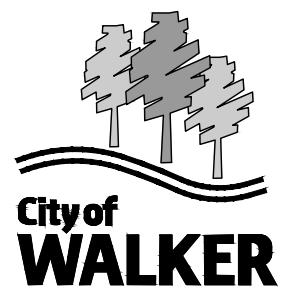
1. CURB HEIGHT SHALL BE INCREASED TO 6" AT EACH CATCH BASIN AND FROM 5' IN EACH DIRECTION ADJACENT TO RIM.

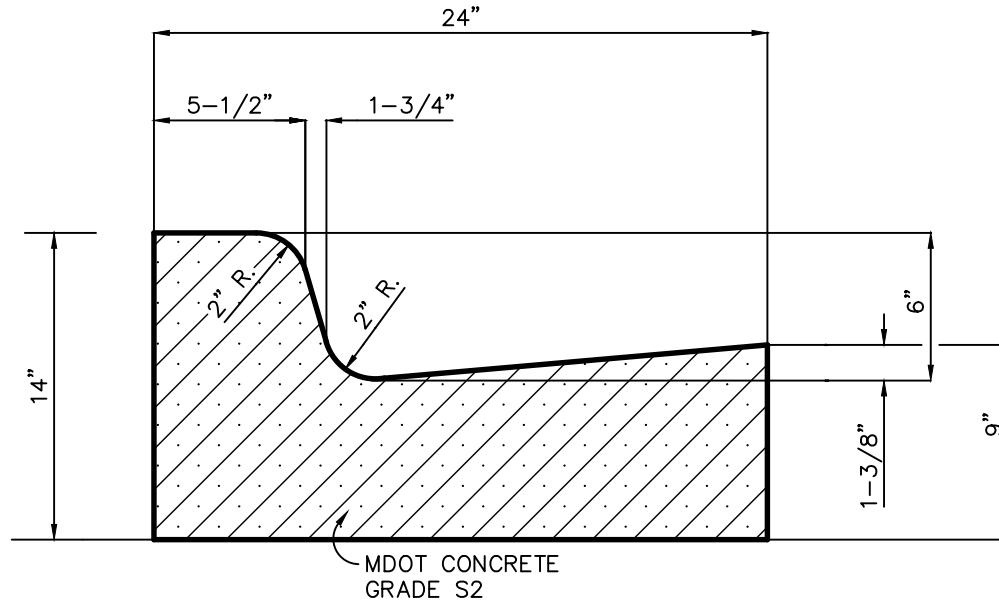




NOTES:

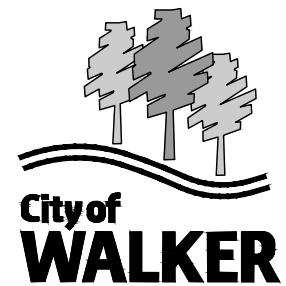
1. CONTRACTION JOINTS TO BE PLACED EVERY 10 FT.
2. EXPANSION JOINTS TO BE PLACED EVERY 300 FT
AND AT THE SPRING POINTS OF RADII

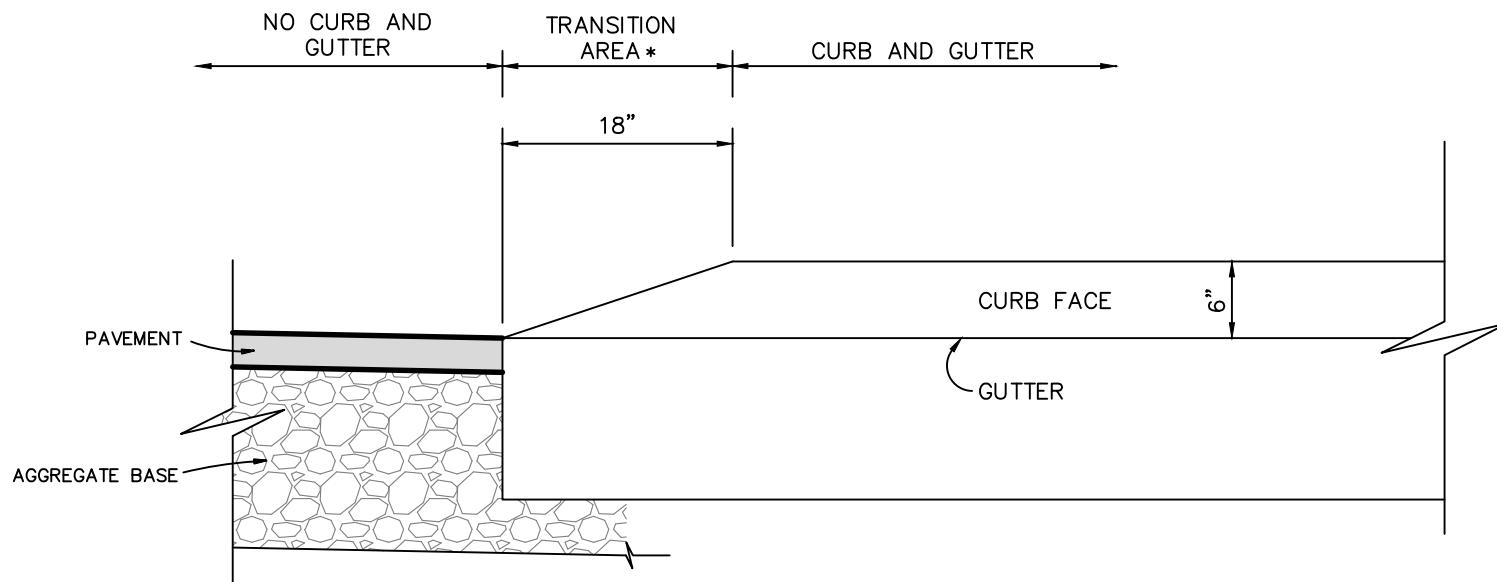




NOTES:

1. CONTRACTION JOINTS TO BE PLACED EVERY 10 FT.
2. EXPANSION JOINTS TO BE PLACED EVERY 300 FT
AND AT THE SPRING POINTS OF RADII
3. DOWEL BARS REQUIRED FOR REPLACEMENT SECTIONS

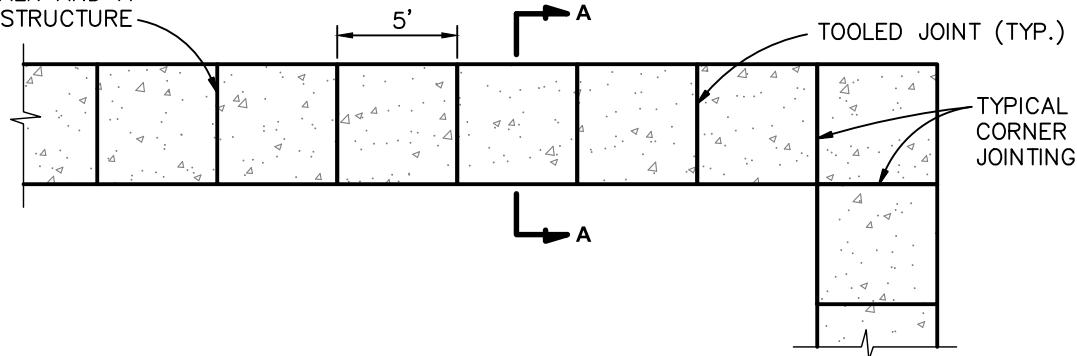




*TRANSITION CURB FROM 6" HEIGHT TO 0" HEIGHT
OVER 18" HORIZONTAL DISTANCE.

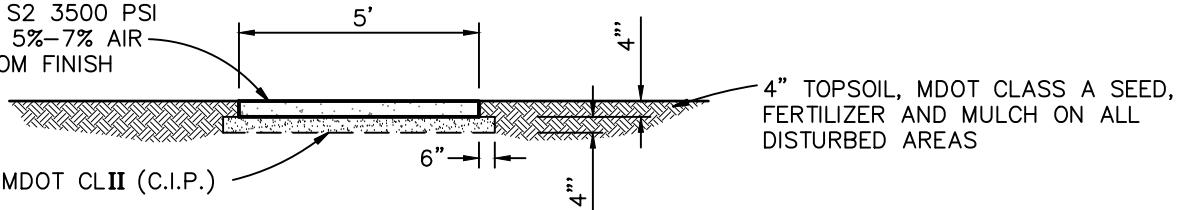


$\frac{1}{2}$ " EXPANSION JOINT EVERY 50' AND/OR AT EACH JOINT BETWEEN SIDEWALK AND A STRUCTURE



MDOT GRADE P1 OR S2 3500 PSI
28 DAY CONCRETE, 5%-7% AIR
ENTRAINED; BROOM FINISH

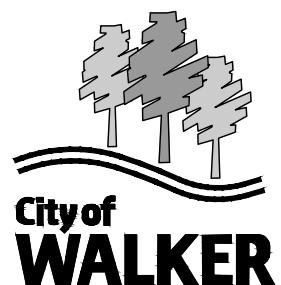
4" MIN. SAND BASE MDOT CLII (C.I.P.)



SECTION A-A

NOTES:

1. MAX CROSS SLOPE IS 2%
2. MAX RUNNING SLOPE IS 5%
3. 1' CLEAR ZONE TO BE PROVIDED FROM EACH EDGE OF SIDEWALK.
4. TOPSOIL TO BE SCREENED WITH NO STONES GREATER THAN $\frac{1}{2}$ " DIAMETER.
5. EROSION CONTROL BLANKET REQUIRED ON ALL SLOPES 1 ON 3 AND STEEPER



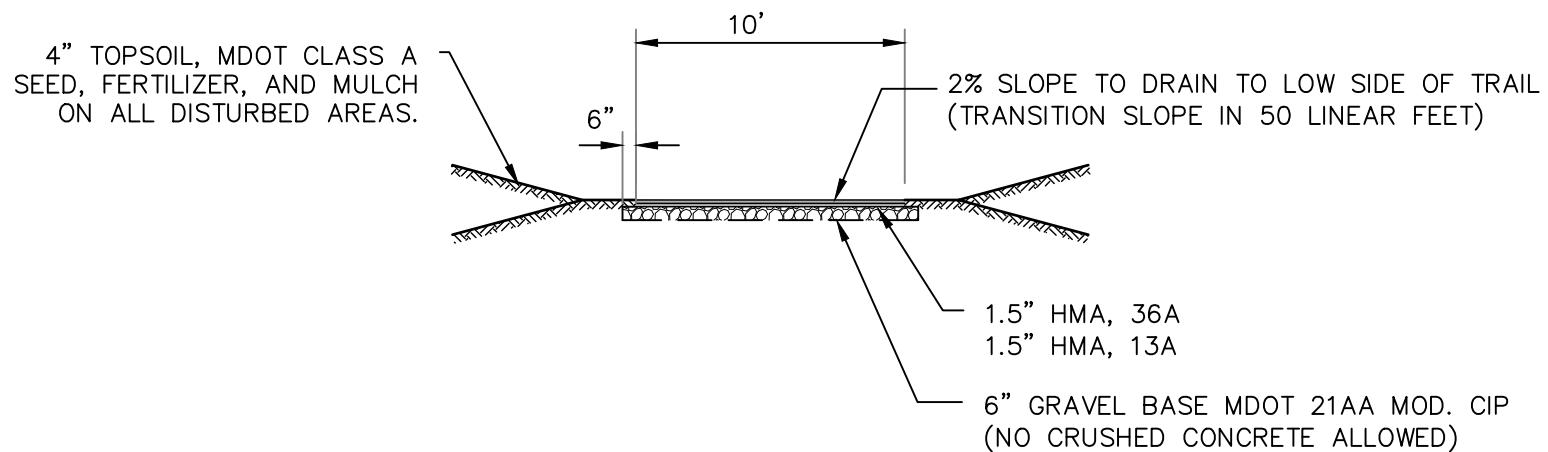
PREPARED BY:

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(616) 261-4801 mailbox@mbco.com

DATE: AUGUST 4, 2020

SHEET NUMBER
SIDEWALK

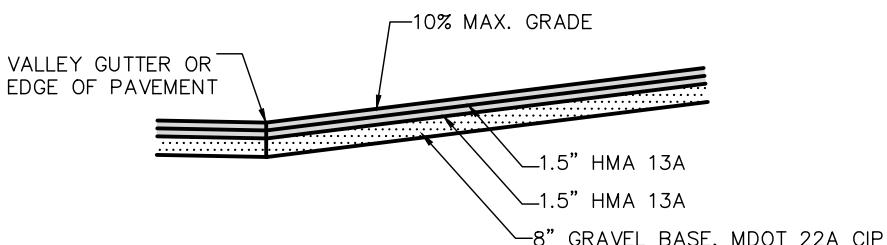
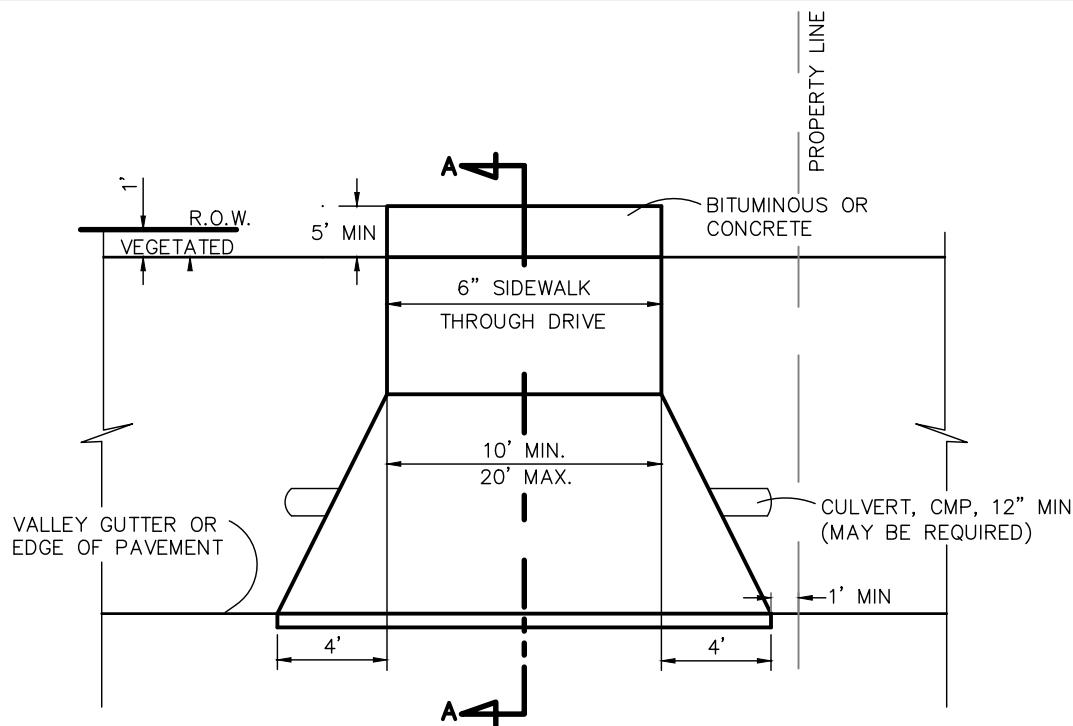
WLK-11



NOTES:

1. MAX CROSS SLOPE IS 2%
2. MAX RUNNING SLOPE IS 5%
3. 2' CLEAR ZONE TO BE PROVIDED FROM EACH
EDGE OF TRAIL.
4. TOP SOIL TO BE SCREENED WITH NO STONES
GREATER THAN $\frac{1}{2}$ " DIAMETER.
5. EROSION CONTROL BLANKET REQUIRED ON ALL
SLOPES 1 ON 3 AND STEEPER

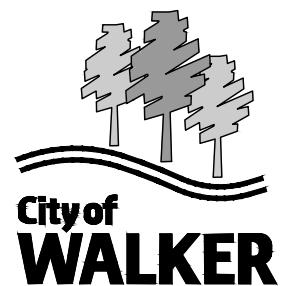


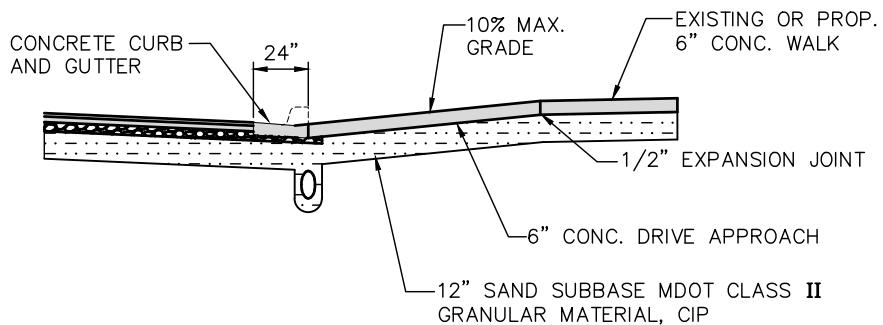
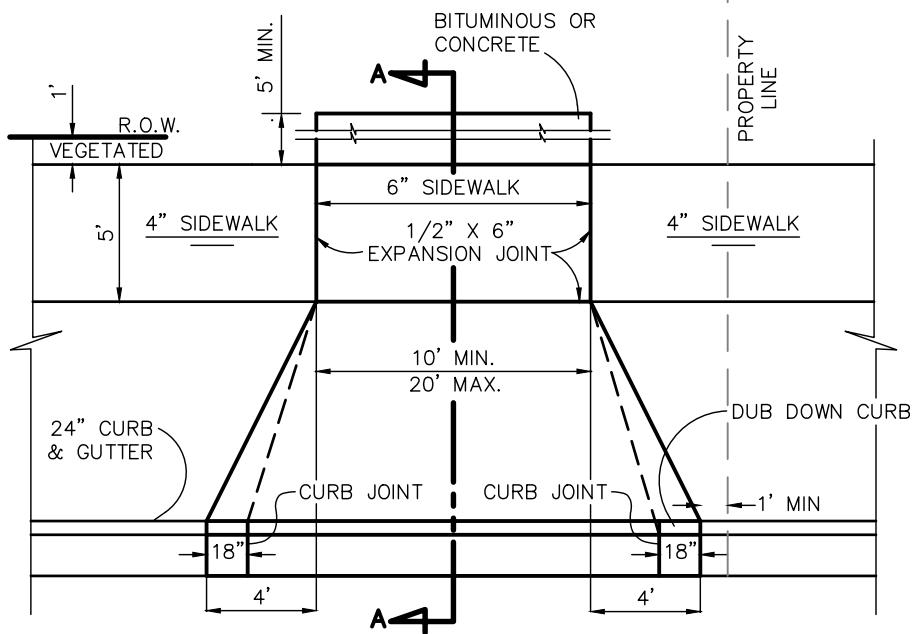


SECTION A-A

NOTES:

1. DRIVEWAYS GREATER THAN 125' IN LENGTH SHALL COMPLY WITH CITY OF WALKER CODE OF ORDINANCES, ARTICLE XII, SECTION 94-356
2. SIDEWALK MAY BE REQUIRED BASED ON ORDINANCE REVIEW



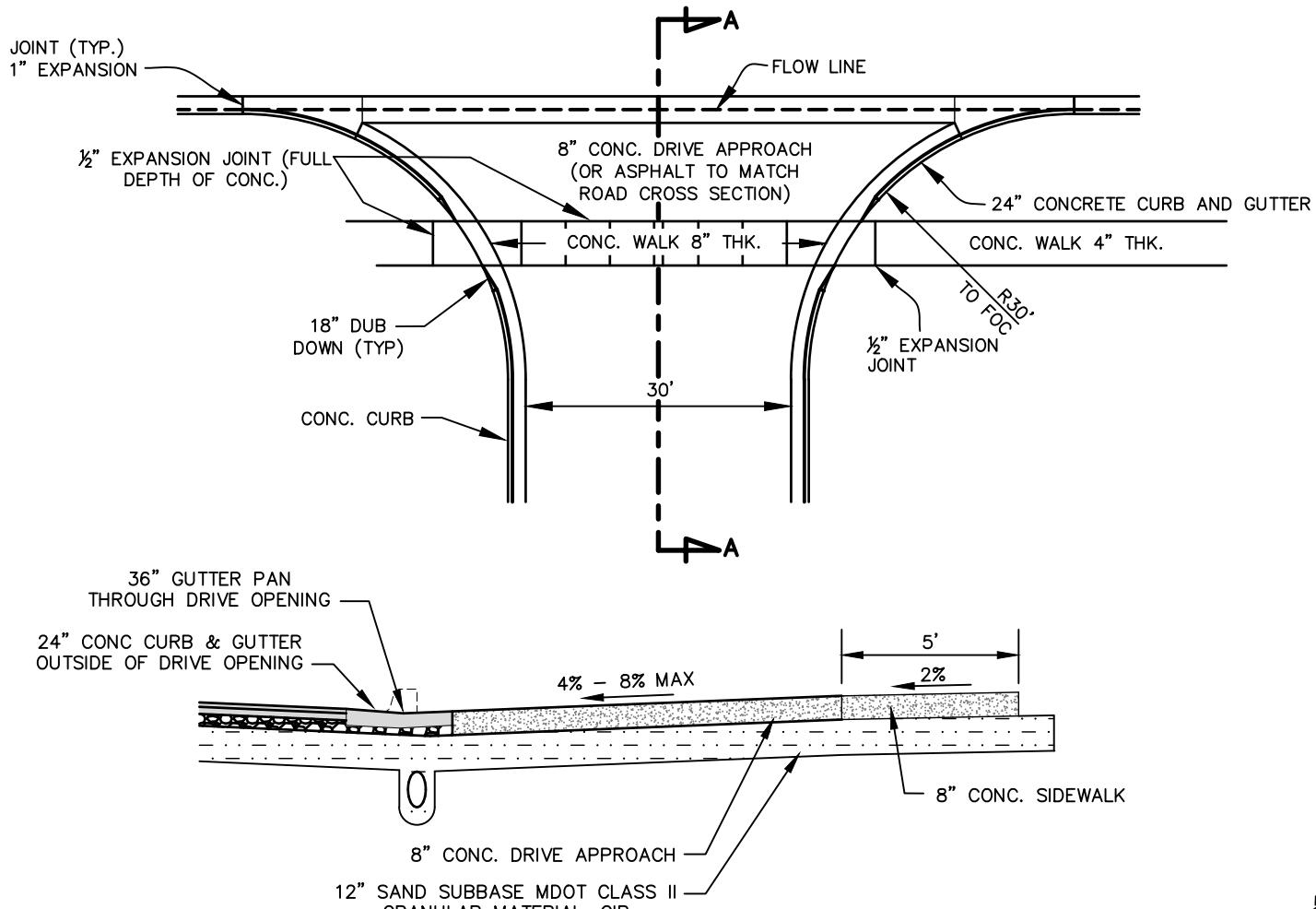


SECTION A-A

NOTES:

1. SAWING AND REMOVAL OF CURB HEAD IS NOT PERMITTED
2. 24' MAX DRIVE OPENING PERMITTED FOR MULTI-FAMILY DRIVE APPROACHES
3. DRIVEWAYS GREATER THAN 125' IN LENGTH SHALL COMPLY WITH CITY OF WALKER CODE OF ORDINANCES, ARTICLE XII, SECTION 94-356





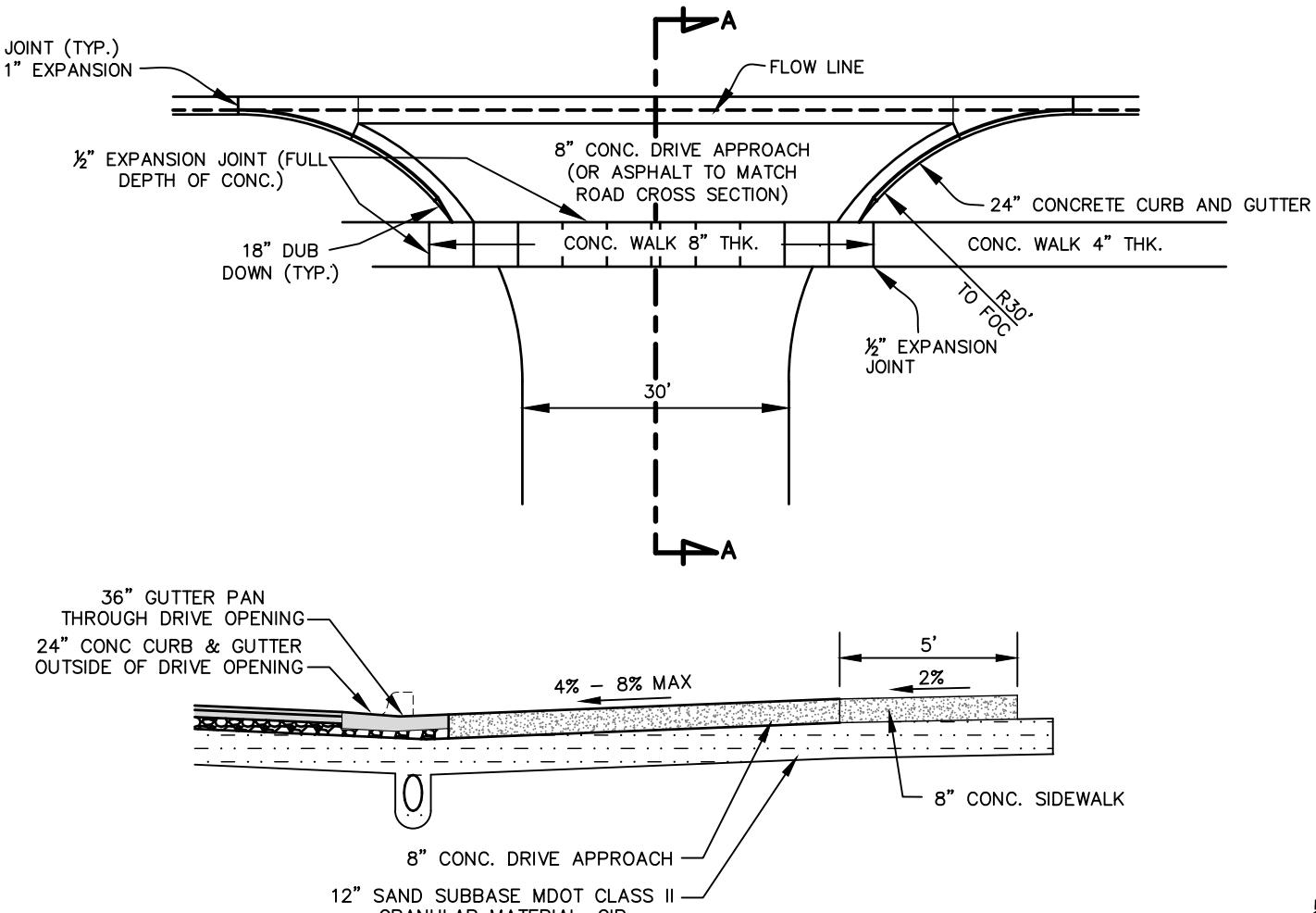
SECTION A-A

NOTES:

1. THE STANDARD DIMENSION SHALL BE USED UNLESS ENGINEERING JUDGEMENT DETERMINES THAT ANOTHER DIMENSION WITHIN THE RANGE IS MORE SUITABLE FOR A PARTICULAR SITE OR SPECIAL CONDITION AND IS APPROVED BY THE CITY ENGINEER
2. RIGHT TURN DECELERATION LANE AND OR TAPER MAY BE REQUIRED BASED UPON EXPECTED TRAFFIC VOLUMES
3. 36' MAX DRIVE OPENING PERMITTED IF STRIPED FOR 2 EXIT LANES. STRIPING MUST BE MAINTAINED ANNUALLY.
4. DRIVEWAYS GREATER THAN 125' IN LENGTH SHALL COMPLY WITH CITY OF WALKER CODE OF ORDINANCES, ARTICLE XII, SECTION 94-245

DATE: DECEMBER 15, 2021



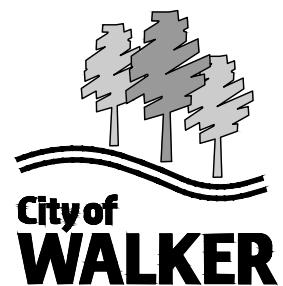


SECTION A-A

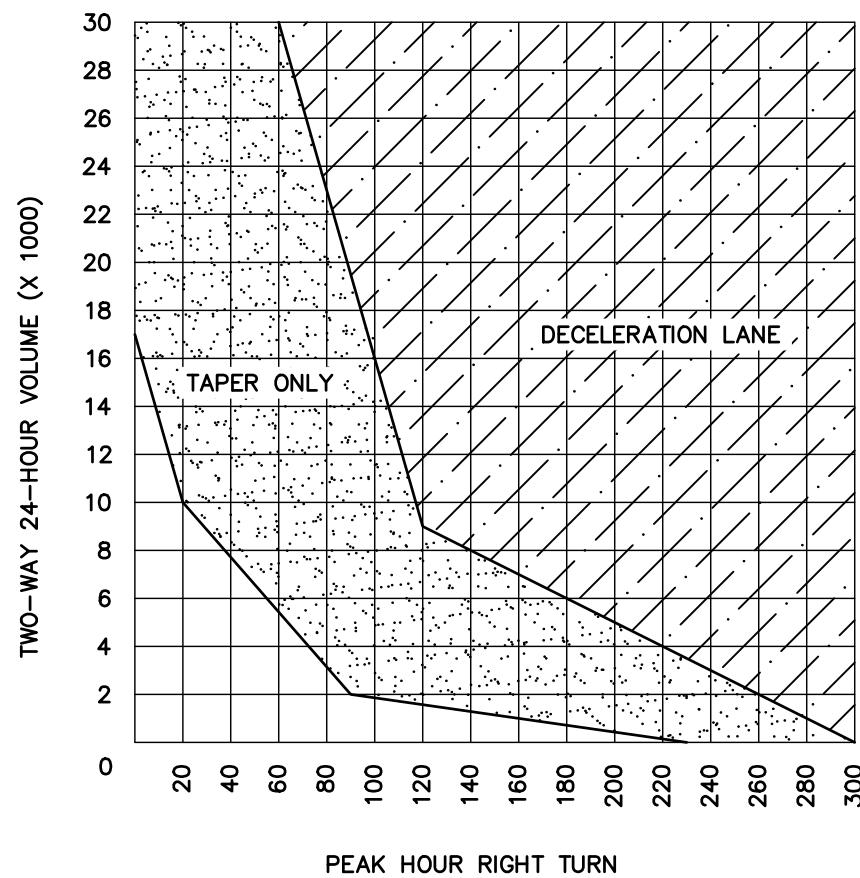
NOTES:

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DATE: DECEMBER 15, 2021



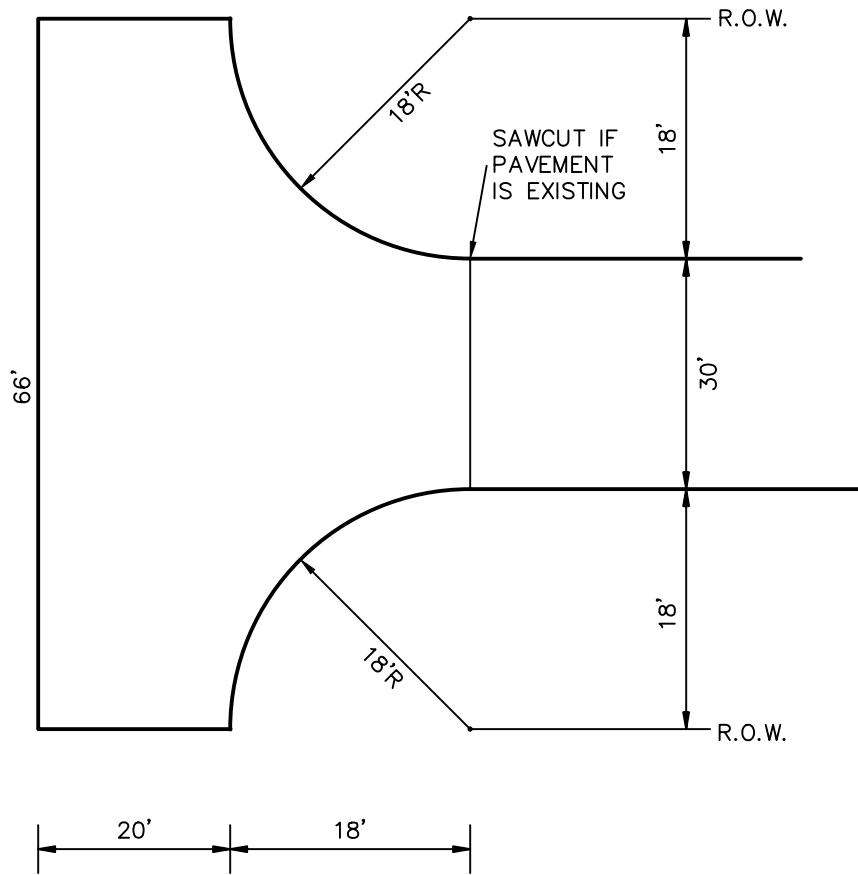
WARRANTS FOR RIGHT TURN
DECCELERATION LANE OR TAPER



NOTES:

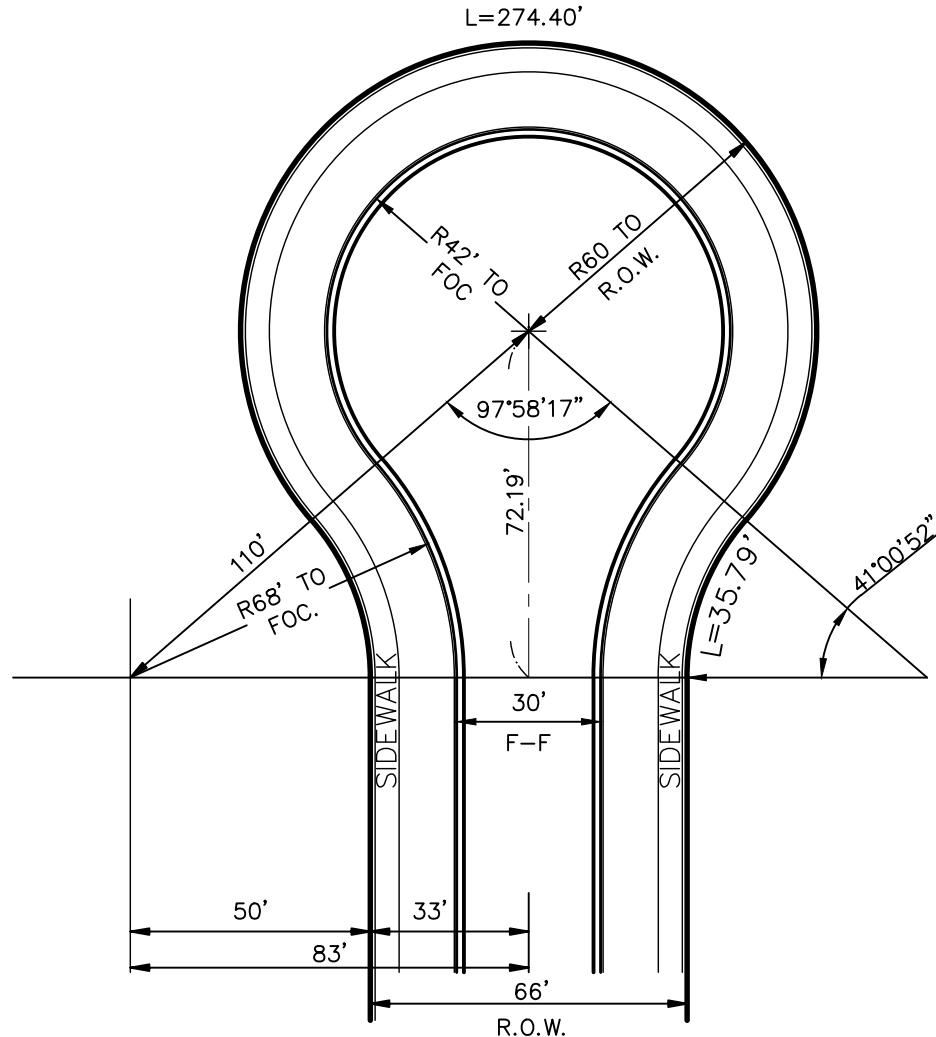
1. THE CITY MAY CONSIDER THE ADDITION OF A DECELERATION LANE OR TAPER BASED ON THIS DETAIL. FINAL DETERMINATION MUST BE APPROVED BY THE CITY ENGINEER.

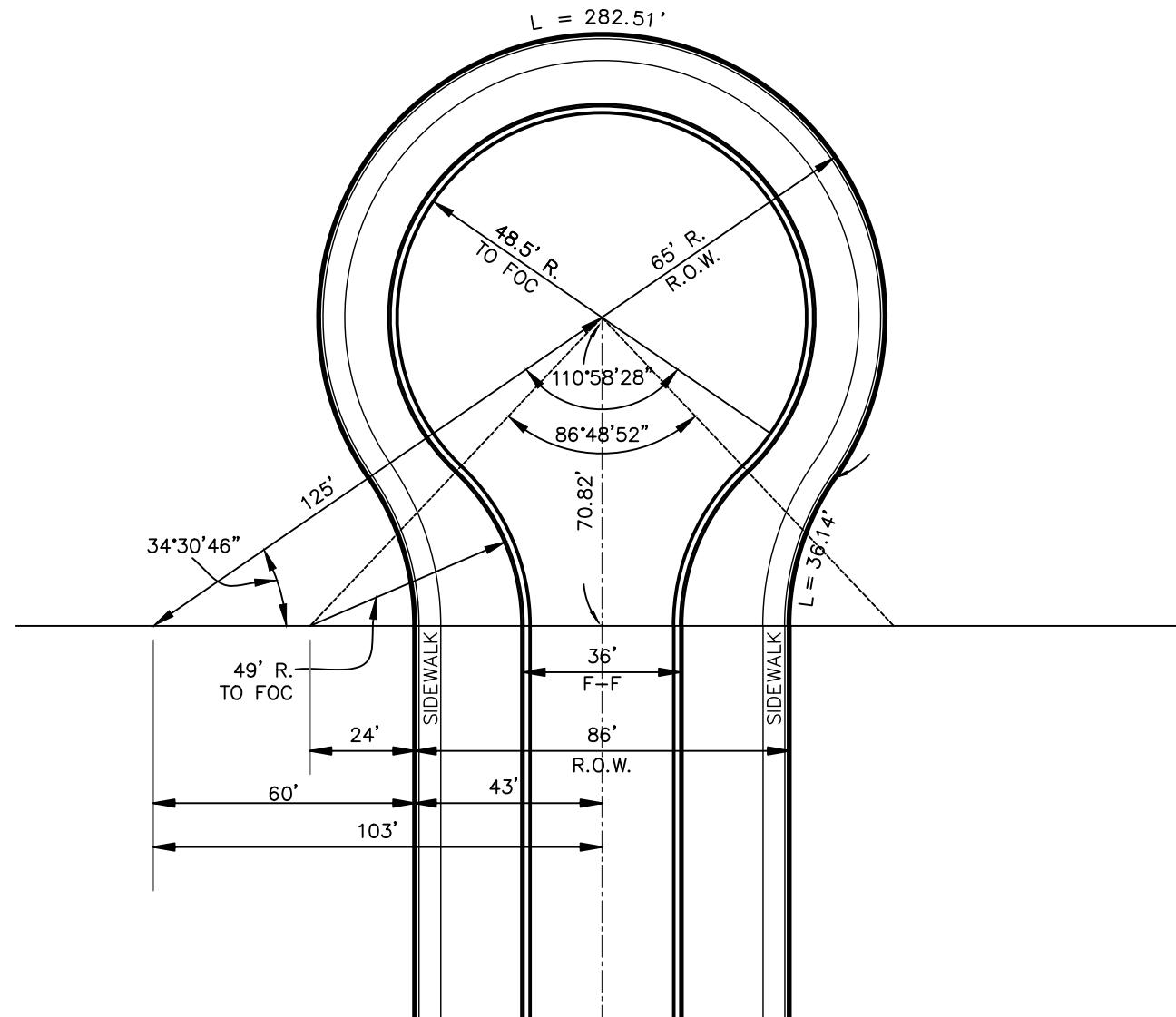


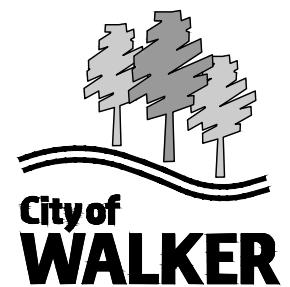
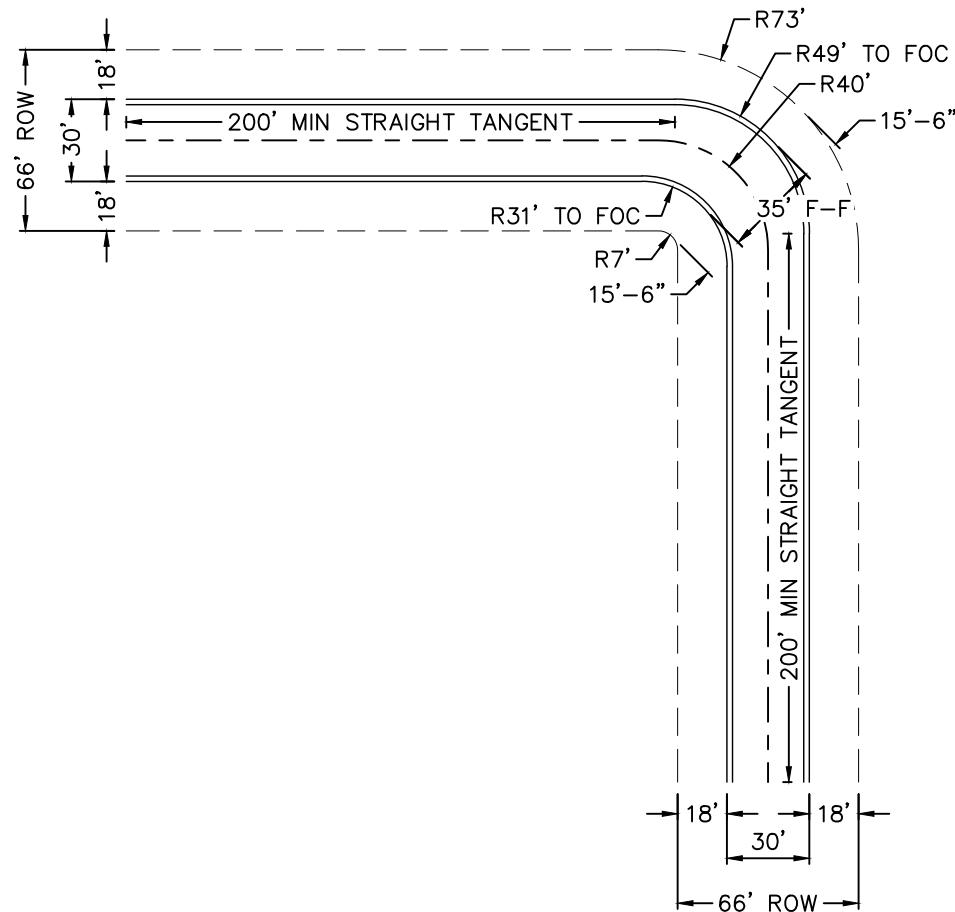


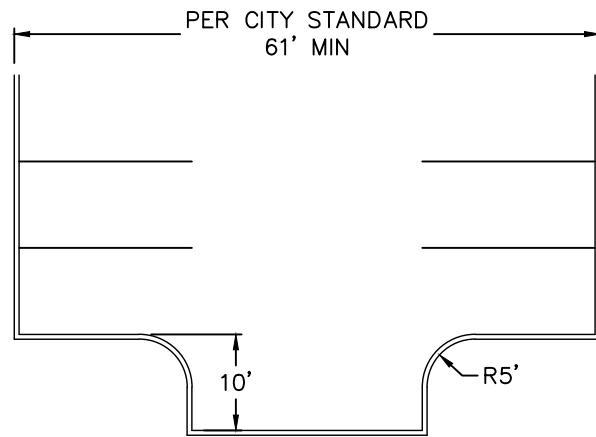
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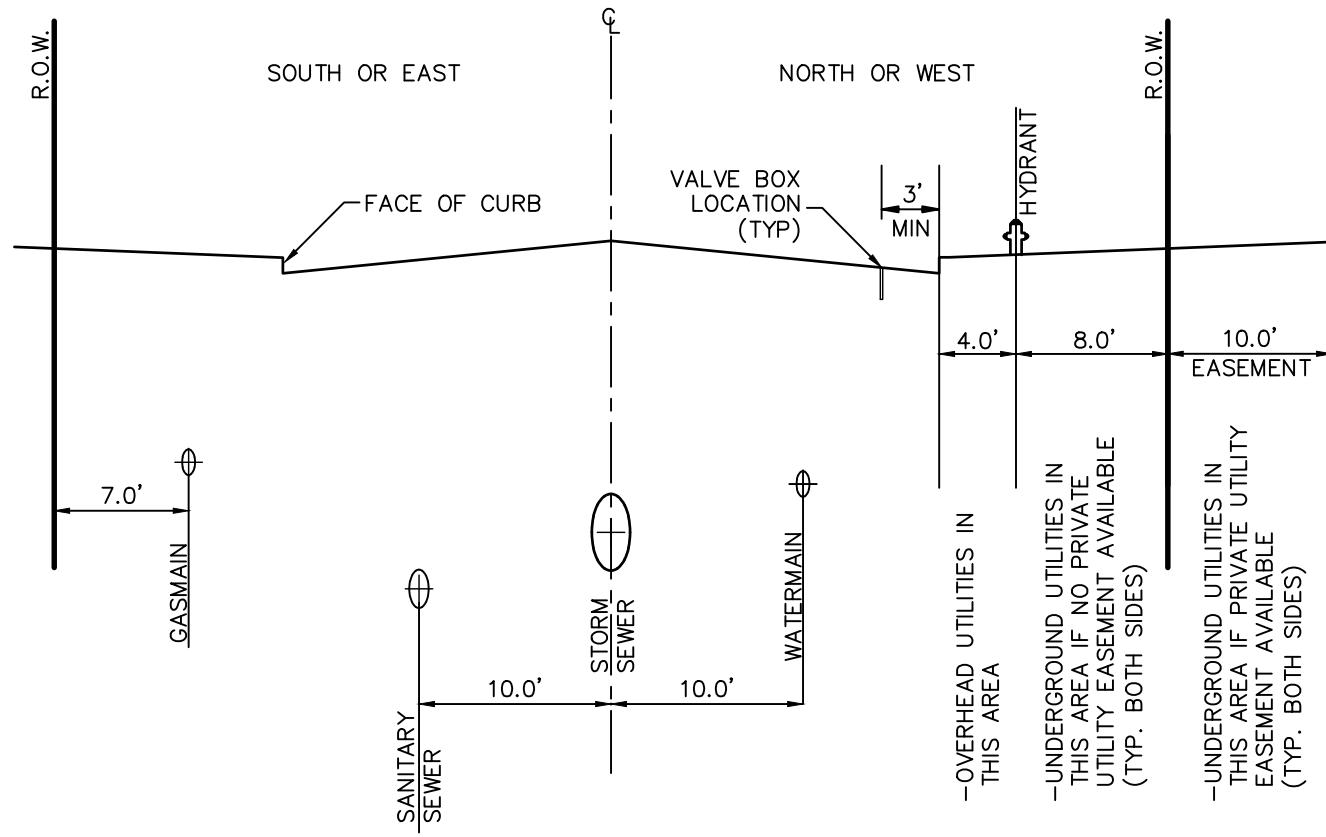
1. MATCH PAVEMENT SECTION ADJACENT TO TURNAROUND
2. A MAXIMUM OF TWO DRIVEWAYS ARE PERMITTED ON THE ROAD SEGMENT ADJACENT TO THE TEMPORARY TURNAROUND





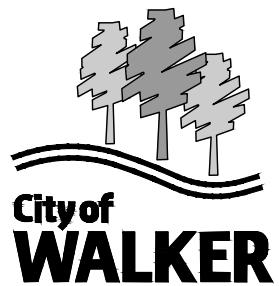


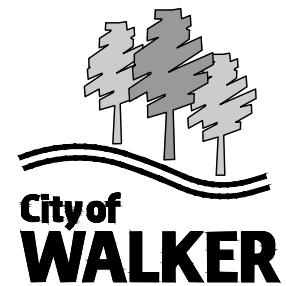
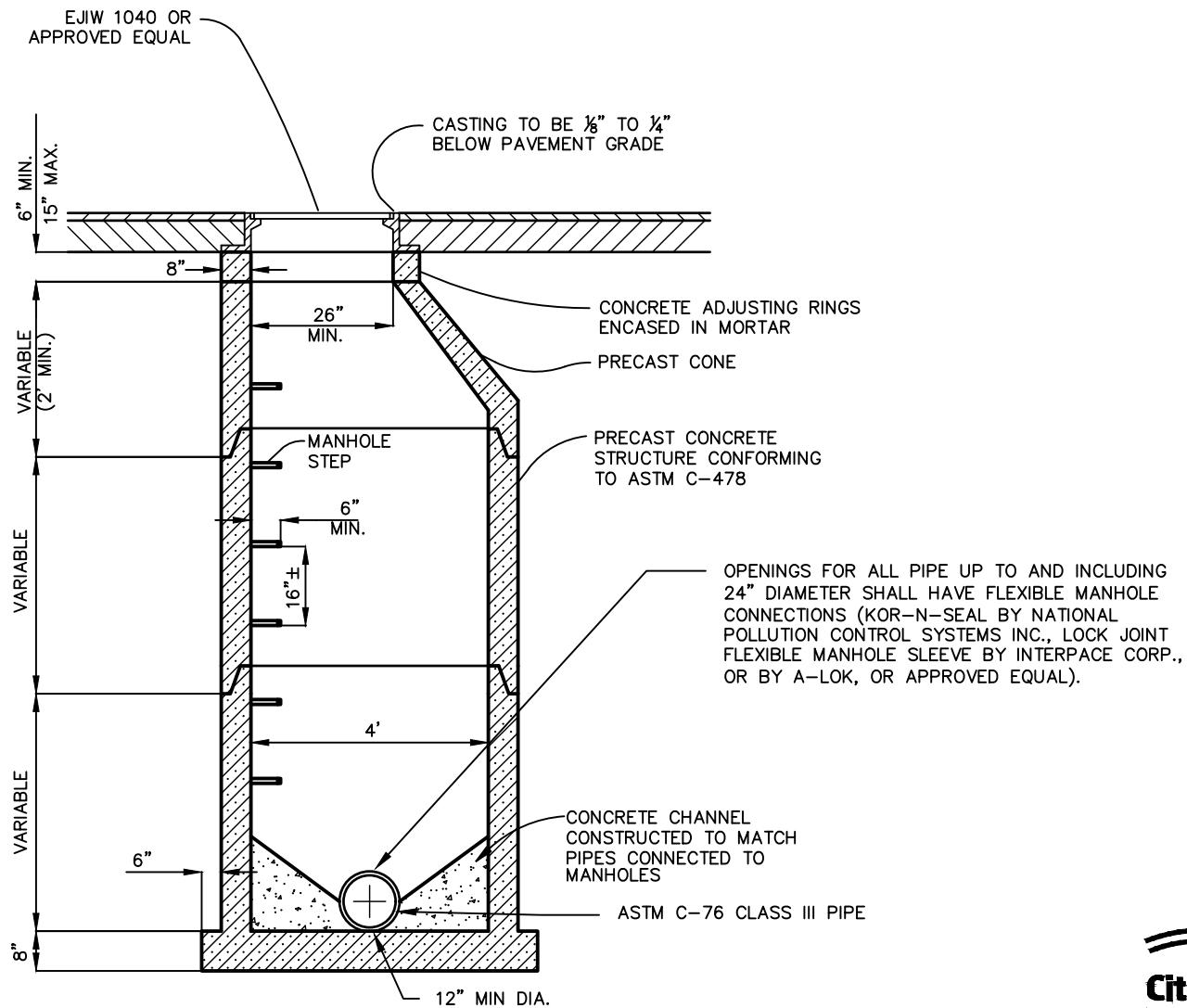


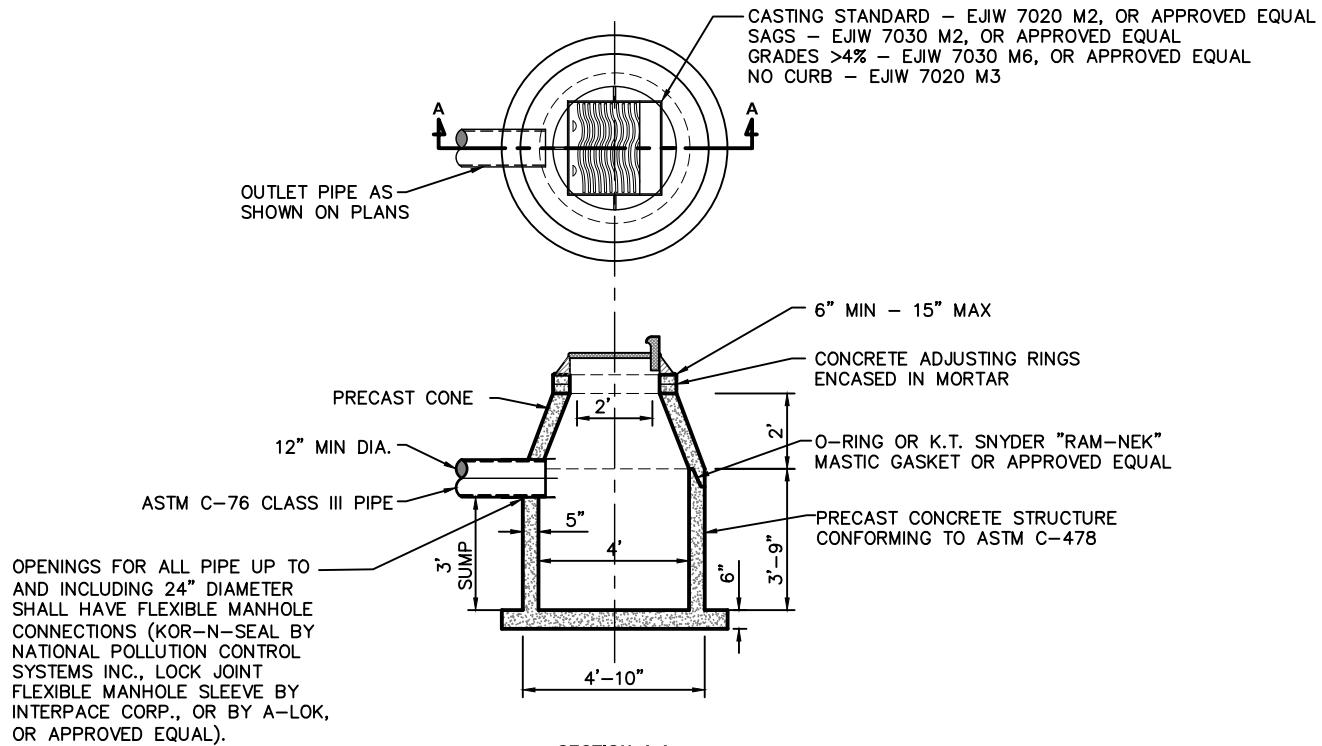


NOTES:

1. PRIVATE UTILITY EASEMENT REQUIRED FOR ALL NEW ROAD CONSTRUCTION.







NOTES:

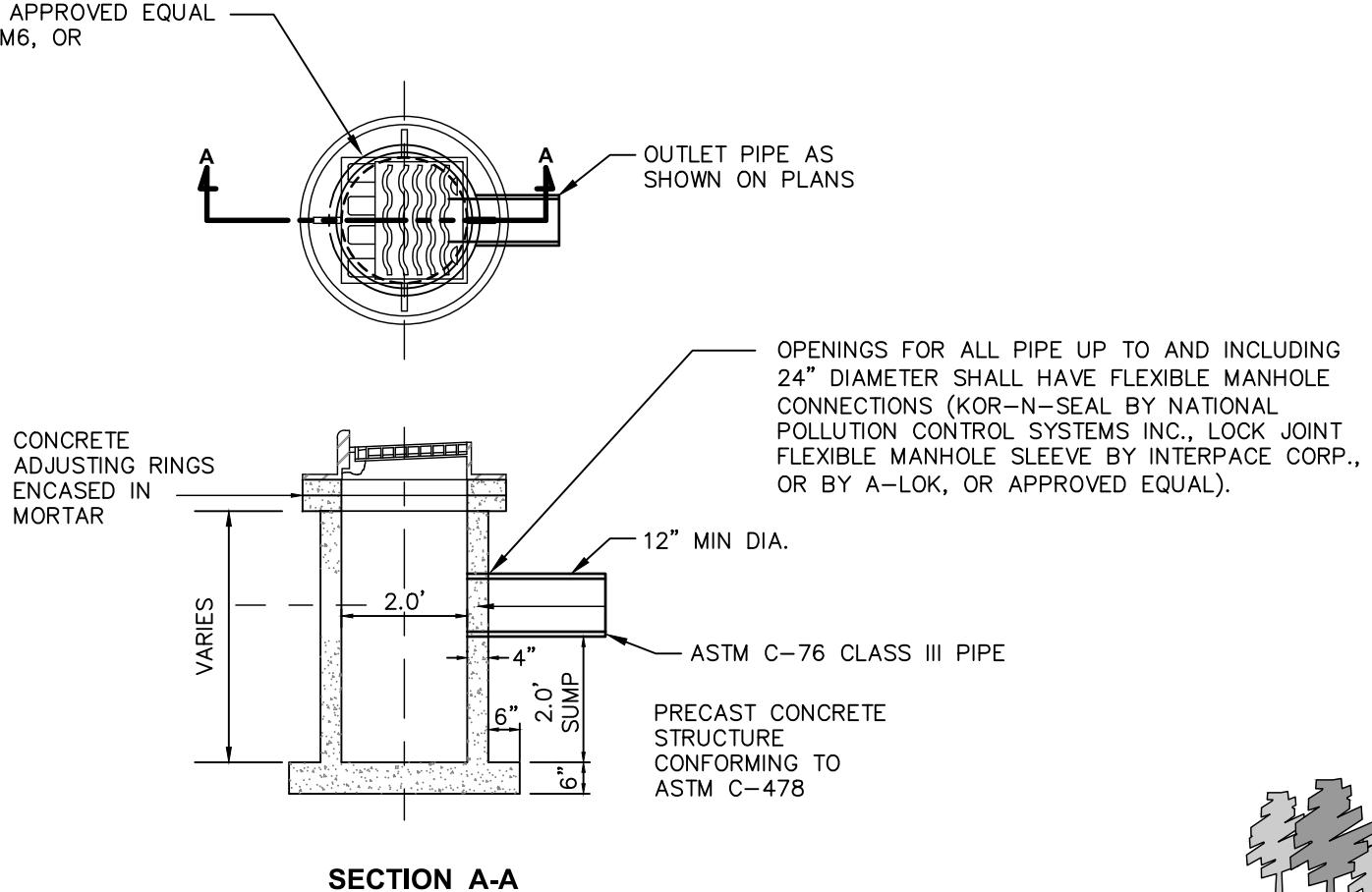
1. INLET MUST INCLUDE DRAINS TO STREAM MESSAGING



CASTING STANDARD - EJIW 7020 M2, OR
APPROVED EQUAL

SAGS - EJIW 7030 M2, OR APPROVED EQUAL
GRADES >4% - EJIW 7030 M6, OR
APPROVED EQUAL

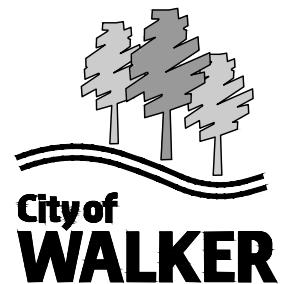
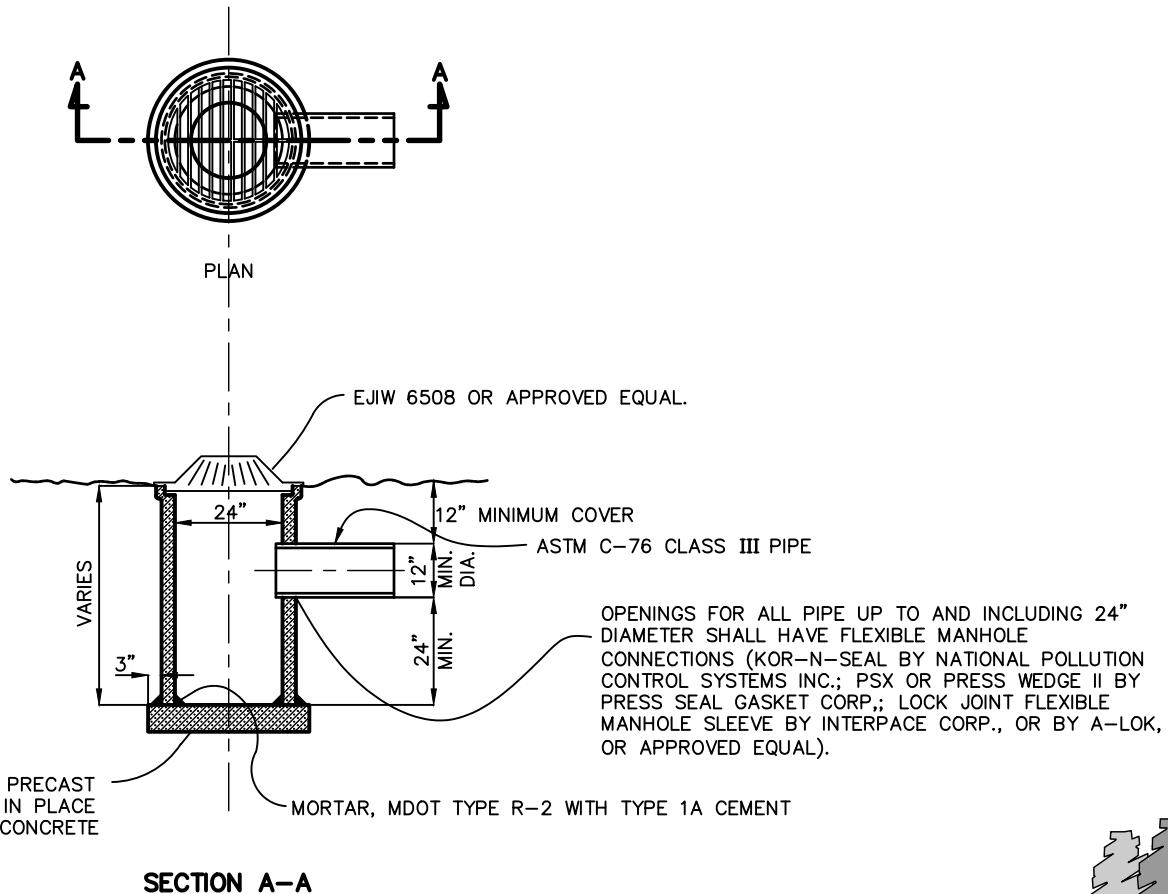
NO CURB - EJIW 7020 M3



NOTES:

1. INLET MUST INCLUDE DRAIN TO STREAM MESSAGING
2. 2' DIAMETER CATCH BASIN SHALL ONLY BE UTILIZED WHEN 4' DIAMETER CATCH BASIN DOES NOT FIT. SPECIAL APPROVAL REQUIRED BY CITY ENGINEER.



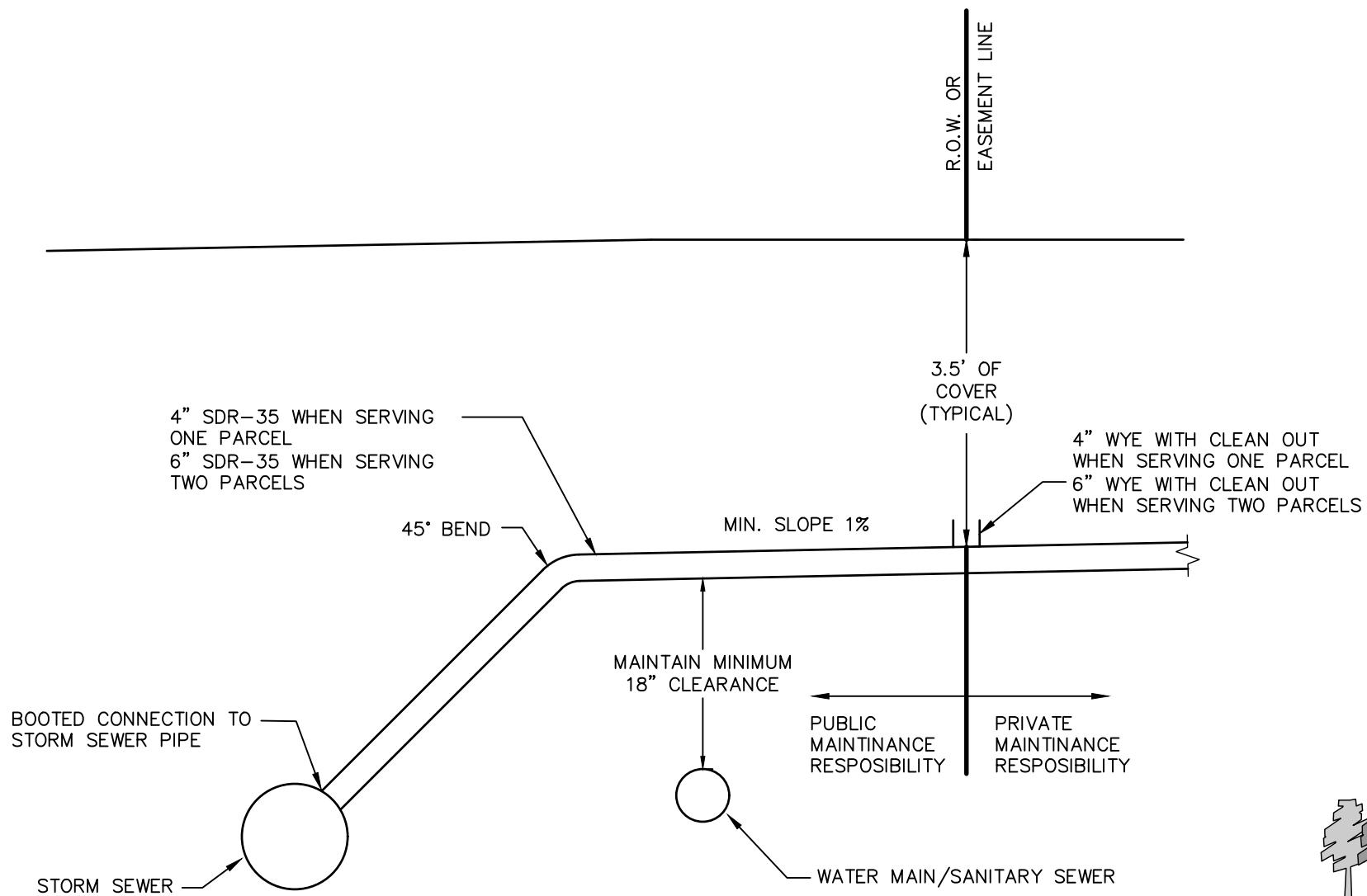


PREPARED BY:
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(616) 263-0801 | msb@mhcs.com

DATE: DECEMBER 14, 2021

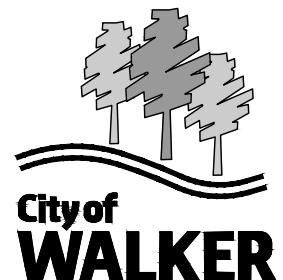
YARD DRAIN

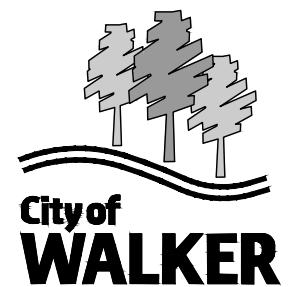
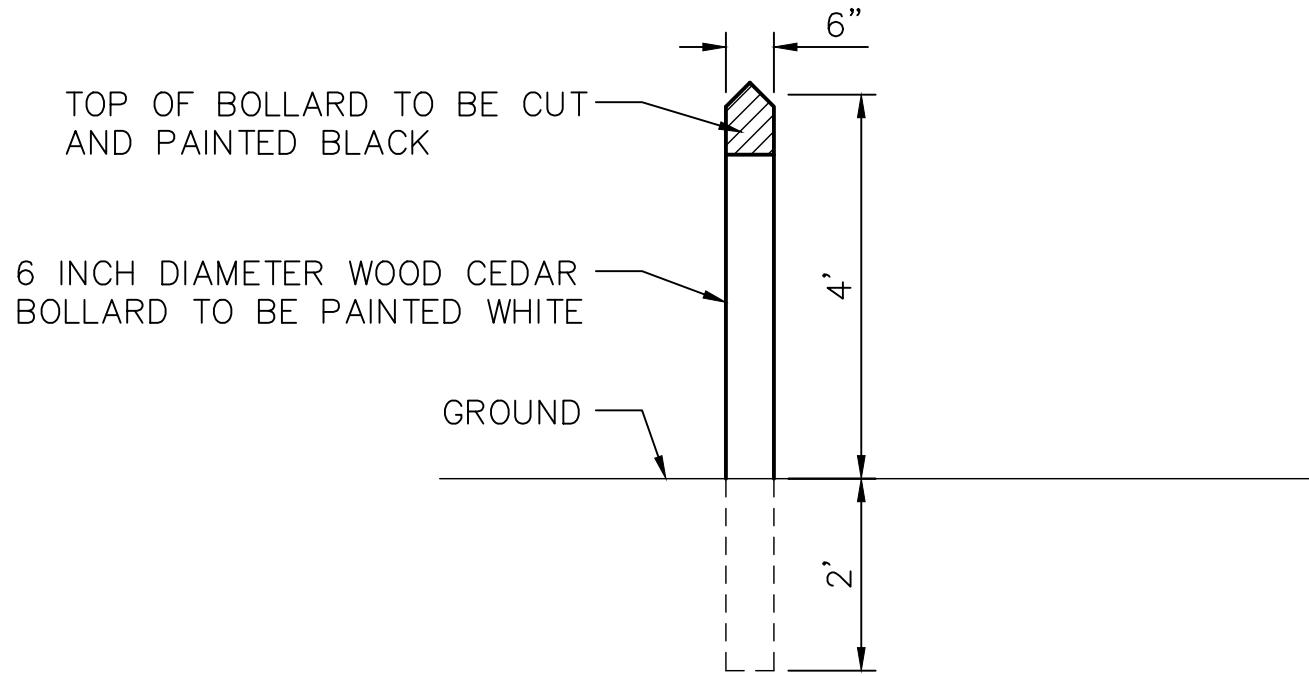
SHEET NUMBER
WLK-27

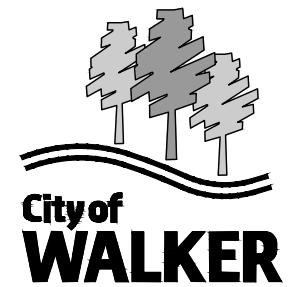
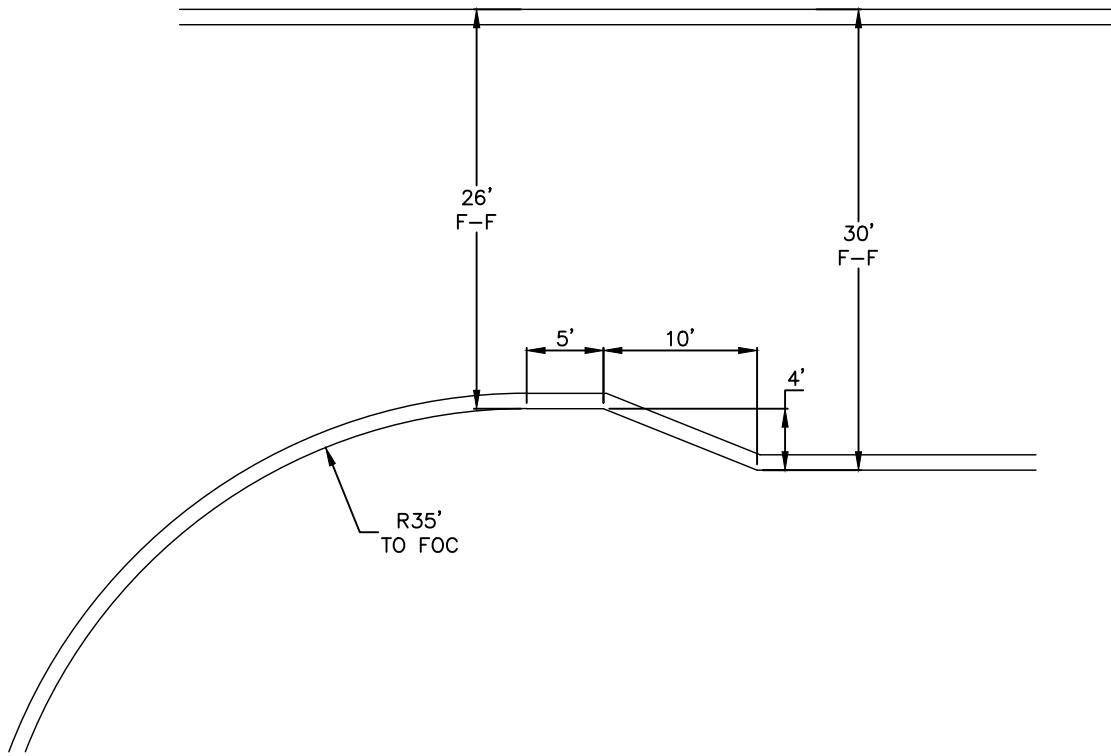


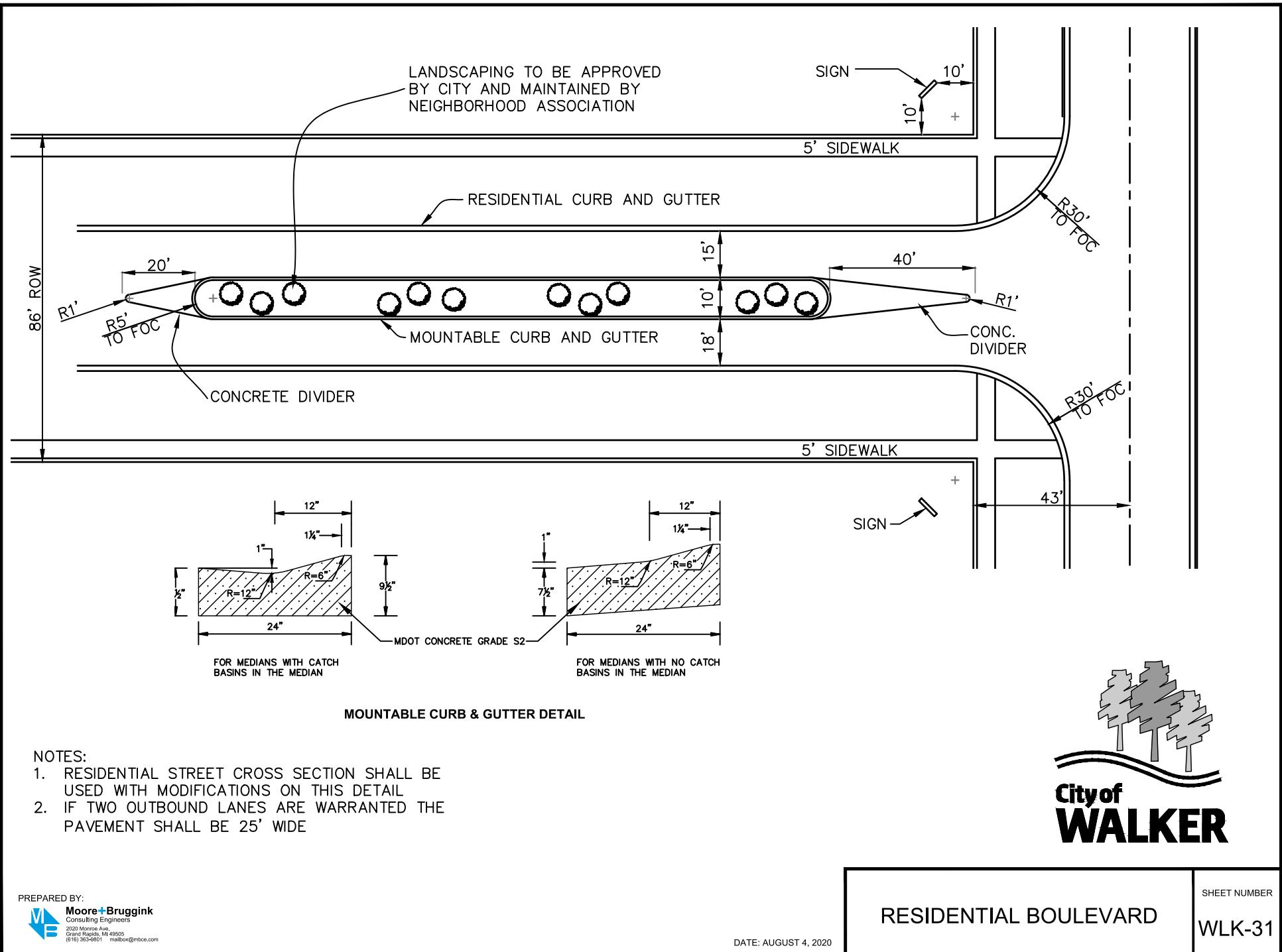
NOTES:

1. AIR GAP MUST BE PROVIDED BETWEEN SUMP PUMP AND STORM LATERAL. DIRECT CONNECTION OF FOOTING DRAINS TO STORM SEWER IS NOT PERMITTED.

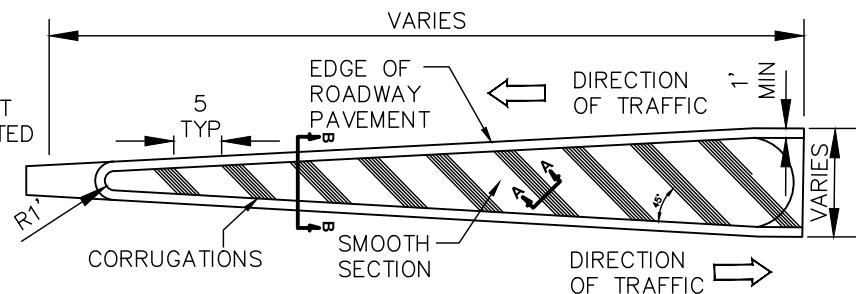








CORRUGATION SPACING SHALL BE ADJUSTED TO AVOID PLACING PAVEMENT JOINTS IN THE CORRUGATED SECTIONS.

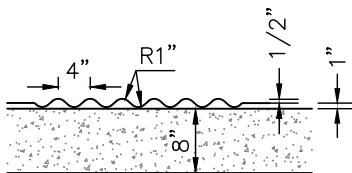


NOTES:

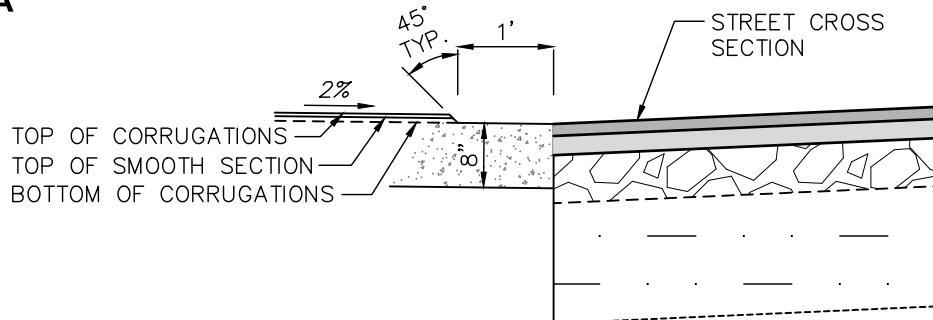
DO NOT SEAL TRANSVERSE JOINTS IN CONCRETE DIVIDER REINFORCEMENT FOR "CONCRETE DIVIDER, TYP 1, REINFORCED" SHALL BE THE SAME AS THE REINFORCEMENT USED IN THE NEW PAVEMENT. JOINTS IN CONCRETE DIVIDER: 1" EXPANSION JOINTS WITHOUT LOAD TRANSFER SHALL BE PLACED IN THE DIVIDER IN LINE WITH EXPANSION JOINTS IN THE ADJACENT CONCRETE PAVEMENT AND AROUND THE EDGE OF CURB.

CONTRACTION OF PLANE OF WEAKNESS JOINTS WITHOUT LOAD TRANSFER SHALL BE PLACED IN THE DIVIDER IN LINE WITH CONTRACTION OR PLANE OF WEAKNESS JOINTS IN ADJACENT CONCRETE PAVEMENT OR BASE COURSE.

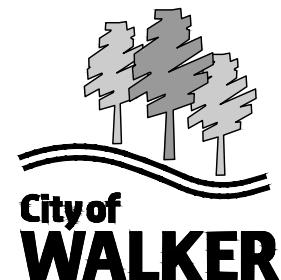
AN APPROVED BOND BREAKER SHALL BE USED ON ONE SIDE OF THE DIVIDER WHEN PAVEMENT JOINTS DO NOT LINE UP.



SECTION A-A



SECTION B-B



Design Accepted	
Scott Conners P.E. City Engineer	Date
As-Built Prepared By: _____ Name _____	
Firm _____	Date _____
<h2>Design Engineers Contact Information</h2>	
<p style="text-align: center;">City of Walker Engineering Department</p> <p style="text-align: center;">IMPROVEMENTS IN (STREET NAME) FROM (ROAD A) TO (ROAD B) (PROJECT NAME)</p>	
Drawn by _____	Sheet No. _____
Checked by _____	X of X



Appendix B

Fee Schedule

CITY OF WALKER - DEPARTMENT OF PUBLIC WORKS - FEE SCHEDULE

Updated: 12-22-21

LICENSE**Contractor**

Construction License* \$10.00 annual

*All contractors performing work within the public right-of-way and/or easements are required to be licensed.

PERFORMANCE BONDS**Contractor**

Driveways / Sidewalk	\$2,000.00 annual (minimum)*
Water / Sanitary / Storm	\$2,000.00 annual (minimum)*
Electric / Gas	\$5,000.00 annual (minimum)*
Telecommunication	\$5,000.00 annual (minimum)*
Monitoring Well	\$5,000.00 annual / per well

*May be increased up to \$10,000 (annual) based on project complexities.

Utility Owner

Electric / Gas	\$5,000.00 annual (minimum)*
Telecommunication	\$5,000.00 annual (minimum)*

*May be increased up to \$10,000 (annual) based on project complexities.

Open Cut*

April 1 - October 31	+ \$2,000.00 per lane (minimum)**
November 1 - March 31***	
Local Street	+ \$5,000.00 per lane (minimum)**
Major Street	+ \$10,000.00 per lane

*Both Contractors and Utility Owners are required to provide Open Cut performance bonds in addition to annual performance bonds.

**May be increased up to \$10,000 per lane based on project complexity.

***Requires DPW Director approval. Only permitted for emergency fixes deemed to be in the public interest.

PERMITS**Commercial Driveway**

New*	\$175.00 per approach
Resurface	\$100.00 per approach

*Developer's engineer is responsible for staking right-of-way, sidewalk, and drive approach.

Residential Driveway

New*	\$125.00 per approach
Sidewalk Restaking	+ \$100.00 per project
Resurface	+ \$0.50 per linear foot

*Includes one sidewalk staking by City. If stakes are missing and/or damaged, Sidewalk Restaking fees apply.

Rural Residential / Field Driveway

New	\$50.00 per approach
-----	----------------------

12" diameter culvert*

24' of pipe (includes 1 load of gravel to embed culvert)	+ \$154.00 each
30' of pipe (includes 1 load of gravel to embed culvert)	+ \$200.00 each
Band	+ \$10.00 each
Flare	+ \$33.00 each

15" diameter culvert*

24' of pipe (includes 1 load of gravel to embed culvert)	+ \$170.00 each
30' of pipe (includes 1 load of gravel to embed culvert)	+ \$230.00 each
Band	+ \$12.00 each
Flare	+ \$42.00 each

18" diameter culvert*

24' of pipe (includes 1 load of gravel to embed culvert)	+ \$230.00 each
30' of pipe (includes 1 load of gravel to embed culvert)	+ \$290.00 each
Band	+ \$15.00 each
Flare	+ \$55.00 each

Gravel*

Additional loads of gravel	+ \$60.00 per load
Resurface	\$50.00 per approach

*Costs apply to new culverts only. Existing culverts will be maintained and/or replaced as necessary by DPW.

CITY OF WALKER - DEPARTMENT OF PUBLIC WORKS - FEE SCHEDULE (cont.)

Updated: 12-22-21

PERMITS (cont.)**Utility**

Water / Sanitary / Storm*	\$50.00 per project
	+ \$0.35 per linear foot
Electric / Gas*	\$50.00 per project
	+ \$0.20 per linear foot

*Utility Boring, Open Cut, and/or Site Investigation permit fees may also apply.

Utility Boring

Water / Sanitary / Storm / Electric / Gas	\$50.00 per bore
	+ \$5.00 each inch-diameter

Open Cut

Between April 1 and October 31	\$100.00 per lane
	+ \$50.00 per utility in open cut
Between November 1 and March 31* - Local Street	\$750.00 per lane
	+ \$50.00 per utility in open cut
Between November 1 and March 31* - Major Street	\$1,000.00 per lane
	+ \$50.00 per utility in open cut

*Requires DPW Director approval. Only permitted for emergency fixes deemed to be in the public interest.

Site Investigation

Utility Spotting	\$50.00 first hole
	+ \$10.00 each additional hole
Soil Boring	\$50.00 first hole
	+ \$10.00 each additional hole
Monitoring Well*	\$100.00 per well

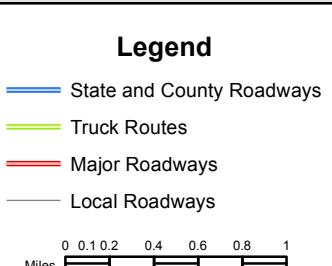
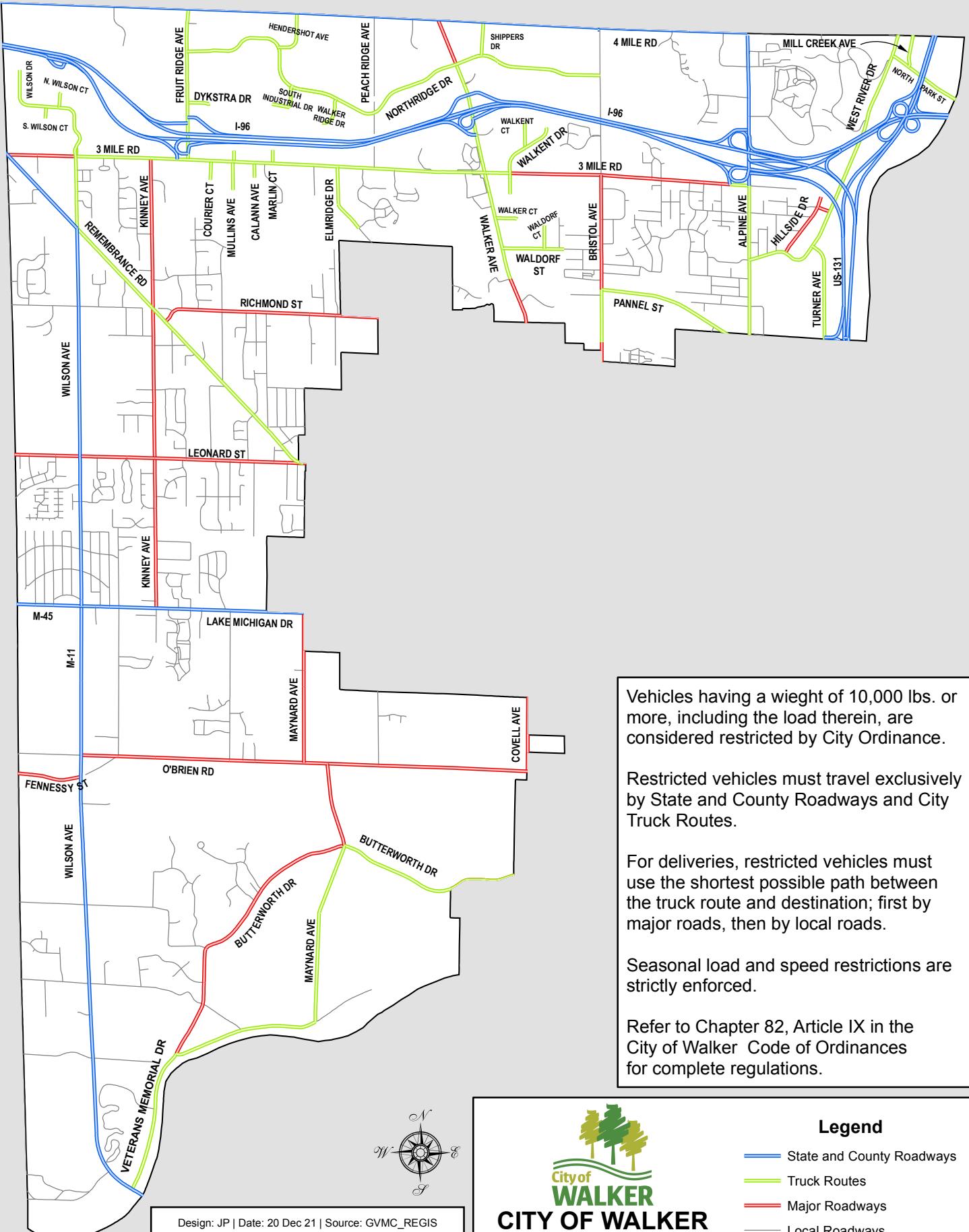
*Approved license agreement with the City must be on file prior to permitting and installation.

MISCELLANEOUS**Leaf Bags**

Residential	\$0.50 per bag
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Appendix C

Truck Route Map



Appendix D

Mast Arm Traffic Signal Policy and Standards

Mast Arm Traffic Signal Policy

As adopted by the City Commission on 19 May 08

The City Commission recognizes the operational and aesthetic benefits of using mast arm signals in place of traditional diagonal or box span signals. It is their contention that the progressive implementation of mast arms will improve safety, by placing traffic signals in-line with road lanes, and provide a cleaner look throughout the City, by reducing the number of overhead wires along City roads. These results should benefit property values and increase business owner confidence throughout the City.

The City of Walker will now require the use of mast arm traffic signals throughout the City, as opportunities for upgrades and new signals present themselves. Private developments shall be required to plan for and utilize mast arms when a traffic signal is required as part of their development. Public projects shall also be designed to utilize mast arms whenever possible.

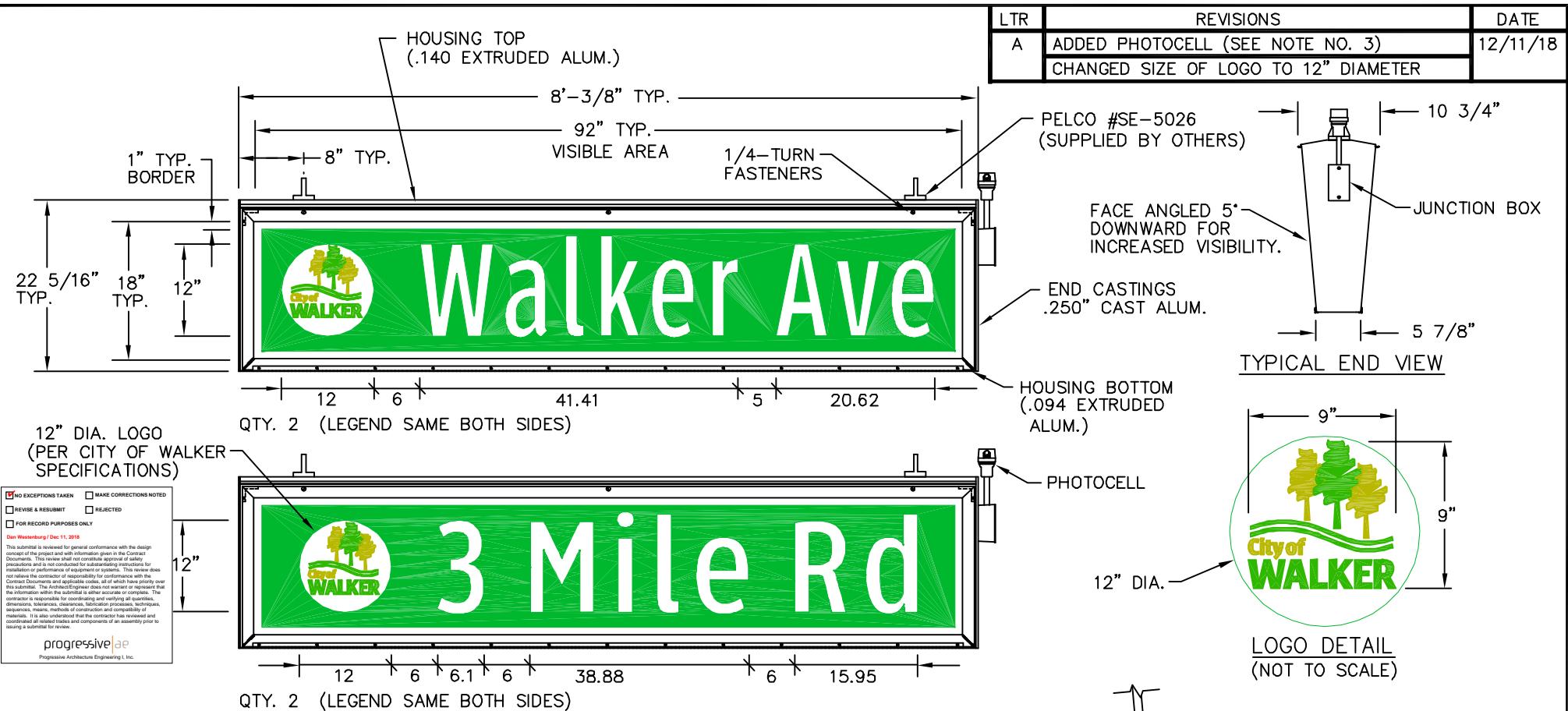
The mast arms shall be made of galvanized steel and shall meet the design specifications required by the City Engineer. Non-coated mast arms shall be used along industrial corridors. Black powder-coated mast arms shall be used along commercial and residential corridors. Green powder-coated mast arms shall be used within the Standale DDA district.

Any exception to this policy must be approved by the City Commission.

Mast Arm Construction Standards

As of 22 July 2019

1. Mast arm system
 - A. Category
 - Category III if arm length 45 feet and under
 - Category II if arm length 50 feet and above
 - Category I if on MDOT roadways (unless MDOT allows otherwise)
 - B. 6-bolt foundation/standard
 - C. Standard and arm colors (to be determined by City engineering staff)
 - Galvanized/plain in industrial areas
 - Powder-coated green “Tiger Drylac RAL 6012 (aka green) in Standale area
 - Powder-coated black all other areas
 - D. “90-degree” arm from standard
 - E. 20-foot borings at all foundation quadrants.
2. Signal heads
 - A. 12” LED traffic signal lenses
 - B. TS head backplates
 - C. 16-inch Countdown LED pedestrian Signal Heads
3. Street Name Signs (see attached)
 - A. 8-foot, two-way illuminated
 - B. Name text size 12-inch
 - C. Upper and lower case
 - D. Current City logo



NOTES:

1. FACE LEGEND SHALL CONSIST OF A CONTINUOUS PIECE OF GREEN TRANSLUCENT VINYL SHEETING APPLIED OVER THE TRANSLUENT WHITE POLYCARBONATE SIGN FACE HAVING THE APPEARANCE OF A WHITE LEGEND AND 1" BORDER ON A GREEN BACKGROUND.
 2. FORMED LETTERS SHALL BE CLEARVIEW HIGHWAY-2-W STYLE FONT, 12" UPPER CASE AND 9 3/4" LOWER CASE. LEGENDS REQUIRING LENGTHS THAT EXCEED THE MAXIMUM SIZE OF THE SIGN FACE SHALL BE ADJUSTED BY CONDENSING THE LEGEND TO MAKE IT FIT.
 3. SIGN FACES SHALL BE BACK LIT BY WHITE LEDS. (PROVIDED BY OTHERS) LEDS SHALL BE ACTIVATED BY THE PHOTOCELL DURING DIM AMBIENT LIGHT.
 4. 1/2" DIA. THREADED HOLE PROVIDED IN BOTTOM OF WEATHERPROOF JUNCTION BOX FOR POWER ENTRY.
 5. DOORS SHALL BE SECURED FROM OPENING BY SIX (6) 1/4-TURN FASTENERS (THREE (3) FASTENERS PER SIDE).
 6. SIGN SHALL BE FULLY GASKETED AND WATERTIGHT.
 7. TOP OF SIGN HOUSING SHALL BE FACTORY DRILLED TO MATCH PELCO TRI-STUD HANGER BODY (#SE-5026), TWO PLACES (CENTERED 8" IN FROM EACH END). HANGER BODY'S SHALL BE FACTORY INSTALLED.
 8. SIGN SHALL BE EQUIPPED WITH FOUR (4) 3/16" DIA. DRAIN HOLES LOCATED IN THE BOTTOM OF THE HOUSING (TWO (2) AT EACH END).
 9. EXTERIOR OF HOUSING ASSY. SHALL BE UNPAINTED ALUMINUM MILL FINISH..
 10. APPROXIMATE WEIGHT OF SIGN ASSY.: 82 LBS.

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS HAVE A TOLERANCE OF $\pm 1/4"$		 NATIONAL SIGN AND SIGNAL 301 S. ARMSTRONG RD BATTLE CREEK, MI 49037			
DRAWN BY: P.H.		TITLE MODELS: #96SNSHOUS2W			
DATE: 09/28/18		8' TWO-WAY STREET NAME SIGN			
OUR JOB NO.: #16285		HOUSINGS W/FACES			
PROJECT/CUST.: CITY OF WALKER, MI (CARRIER & GABLE #154946)		SCALE	REVISION	SIZE	DRAWING NO.
		1: 20	A	A	S2754

Appendix E

Street Tree Planting

Specifications

Street Tree Policy

Updated: December 20, 2021

Specifications

At the time of installation, all street trees shall be of a minimum caliper of two (2") inches, measured five feet (5') above the ground.

No street trees, other than those with a mature height of less than twenty-five (25') feet, shall be planted within ten (10') feet of any overhead utility wire.

No street tree shall be planted over or within five (5') lateral feet of any underground water, sewer or electrical lines (excluding telephone, cable television and individual service lines.)

No street tree shall be planted closer than ten (10') feet to a fire hydrant, utility pole or streetlight.

No street tree shall be planted within fifteen (15') of a street intersection.

Tree Species Selection and Diversity

This policy seeks to plant street trees where they will thrive with minimal maintenance. Choosing an appropriate street tree species involves an examination of onsite soils, rooting space, drainage, overhead wires, crown space, sun exposure, prevailing winds, winter salt spray and other streetside environmental conditions.

In addition, a primary goal of this policy is to protect the initial investment made in street tree plantings by requiring a diversity of species on the approved street tree plan. Stark examples of tree diseases or pests wiping out monocultures of street trees are abundant. Therefore, the City of Walker street tree policy seeks an assortment of tree species to provide some insurance against present and future pests and diseases.

The following list denotes street tree species that are appropriate for western Michigan:

- American Hophornbeam
- Elm
 - Accolade
 - Allee
 - Commendation
 - Pioneer
 - Triumph
 - Frontier
- Ginkgo species
- Hackberry species
- Honeylocust species
- London Plane Tree
 - Bloodgood

- Maples
 - Amur
 - Autumn Blaze
 - Celebration o Columnar
 - Crimson Century
 - Crimson King
 - Emerald Queen
 - Freemani
 - Pacific Sunset
 - Parkway
 - Princeton Gold
 - Red Sunset
 - Scarlet
 - State Street
 - Sugar
 - Summershade
- Oak species
 - Bur
 - Crimson Spire
 - Pin (Not in alkaline soils)
 - Red
 - Sawtooth
 - Scarlet
 - Shingle
 - Sky Rocket
- Ohio Buckeye
- Pear species
 - Aristocrat
 - Autumn Blaze
 - Cleveland
- Other species if approved by the City of Walker.

The following is a list of non-approved street trees:

- American Elm
- Beech species
- Box Elder
- Bradford Pear
- Catalpa
- Cottonwood
- Mulberry species
- Paper Birch
- Pine species
- Russian Olive
- Silver Maple
- Spruce Species
- Weeping Willow

Street Tree Maintenance

The initial planting of street trees will include adequate watering, mulching, wrapping, staking, pruning and fertilization by the installer. In most cases, the street trees will be guaranteed by the installer for one year, provided that the owner of the associated platted lot or site condominium unit irrigates the tree on a regular basis. The owner of the associated platted lot or site condominium unit is responsible for the ongoing maintenance of their street tree.

In addition to regular tree maintenance (e.g., fertilizing, watering, staking, etc.) to be completed by the lot or unit owner, the City of Walker Department of Public Works may prune or remove street trees that impair street visibility, snow removal, utility lines, pedestrian movements or otherwise negatively affect the public health, safety and welfare.

Appendix F

Updates History

Updates History

February 22, 2021

Original Version

March 10, 2021

Appendix A - Details - WLK-18 - Residential Cul-de-sac
Appendix A - Details - WLK-19 - Commercial Cul-de-sac
Appendix A - Details - WLK-20 - 90° Road Corner

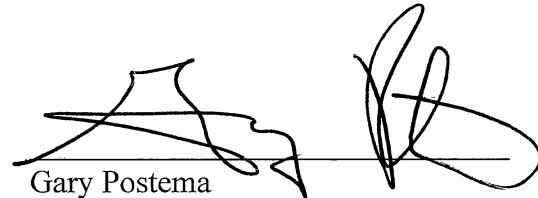
December 22, 2021

Section 1 - General - Performance Security
Section 3 - Driveways - Commercial Driveways - Driveway and Sidewalk Staking
Section 10 - Miscellaneous - Objects in the Public Right-of-way and Public Easements
Appendix A - Details - WLK-7 - Valley Gutter
Appendix A - Details - WLK-15 - Commercial Drive Approach - C&G on Site Drive
Appendix A - Details - WLK-16 - Commercial Drive Approach - NO C&G on Site Drive (New)
Appendix A - Details - WLK-24 - Storm Sewer Manhole
Appendix A - Details - WLK-25 - 4' Diameter Catch Basin
Appendix A - Details - WLK-26 - 2' Diameter Catch Basin
Appendix A - Details - WLK-27 - Yard Drain
Appendix A - Details - WLK-28 - Storm Lateral (New)
Appendix B - Fee Schedule
Appendix C - Truck Route Map
Appendix E - Street Tree Planting Specifications
Appendix F - Updates History (New)

Updates approved on December 22, 2021 by:



Scott Conners, P.E.
City Engineer



Gary Postema
DPW Director