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SECTION 9 - PLAN PREPARATION AND PROJECT AUTHORIZATION

9.1 INTRODUCTION

Plans are defined as construction drawings prepared and approved by the Project Engineer, defined here as the Engineer of Record, that clearly show the location, character, dimensions, and details of all proposed work to be performed by the contractor. These plans, along with a project manual, are part of the plans, specification, and estimate (PS&E) assembly. The PS&E assembly shall be prepared by the Project Engineer and submitted to the City of Round Rock (CoRR) upon the completion of design for each roadway project.

These plans shall be prepared using the guidelines provided in this chapter. Following these guidelines will produce plan sheets that are accurate, neat, and presentable that will reproduce legibly. An accurate and well-organized plan set shall be created to give potential bidders an opportunity to prepare as accurate a bid as possible, to allow efficient overseeing of construction performance, and to form a record copy for future construction reference. Inaccurate or unclear plans, however, may result in an increase in costs due to incorrect interpretations or omission of the plan information. Therefore, it is important that well-organized and efficient plan assemblies be prepared on all projects.

It is recognized that the level of design needed will vary by project. Therefore, the City and the Project Engineer will determine the need for Schematic Design and other design review submissions at a pre-design meeting. This will ensure an appropriate development of the design with corresponding reviews by the City.

9.1.1 References

The publications listed in this section provided much of the fundamental source information used in the development of this chapter. This list is not all-inclusive and there are numerous manuals, documents, and journals that explain the techniques and formats required to prepare accurate, clear, and presentable construction plans. Note that these publications and the standards and specifications they contain are not static documents, but are expected to be revised continually. Therefore, Project Engineers shall always check the appropriate website for the most recent versions.

Federal Highway Administration (FHWA):

- *Project Development and Design Manual (PDDM)*

Texas Department of Transportation (TxDOT):

- *PS&E Preparations Manual*
- *Project Development Process Manual*

PS&E assemblies prepared for roadway projects in the CoRR shall be produced in accordance with the criteria, guidelines, and data requirements included herein. Where discrepancies occur between the information provided herein and any of the above references, the following descending order of priority shall govern: (1) *City of Round Rock Design and Construction Standards*, (2) TxDOT's *Project Development Process Manual*, and (3) FHWA's *Project Development and Design Manual*. For additional guidance not covered in this chapter, refer to TxDOT's *PS&E Preparations Manual*.

9.2 PROJECT-SPECIFIC QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PLAN FOR CIP PROJECTS

Quality Control (QC) is the process of quality checks and reviews performed on all project deliverables prior to submitting to the client to check the conformance, accuracy, scope, and style of a project deliverable. This includes detailed checking of plans, calculations, specifications, reports, and studies for accuracy and consistency, detecting and correcting design omissions and errors, confirming product meets the required level of completeness for the phase/milestone being submitted, and assessing and verifying compliance with design criteria, applicable computer aided design and drafting (CADD) standards and requirements, and other project requirements.

Quality Assurance (QA) is the process of reviewing the quality control process for use and effectiveness at preventing mistakes and ensuring compliance. This process includes designing and using guidelines, procedures, roles, and responsibility assignments to ensure that approved quality control practices are properly and consistently implemented, executed, and monitored. The QA is the final quality review completed on project deliverables to assure that all other required quality checks and reviews have been completed and resulting comments have been resolved and verified.

The purpose of the QA/QC plan is to prevent errors from being introduced to the engineering, design, plans, and cost estimates and to ensure decisions are supported by comprehensive studies and sound engineering judgment. The plan shall also identify key individuals and their unique methods and experience that reflect best quality control practices and the application of those methods uniformly across the design process.

The Project Engineer will submit a project-specific QA/QC plan for review within 30 days of the notice to proceed (NTP) or executed work authorization. This plan must outline the measures that will be employed to ensure that the City will receive an accurate product that matches industry quality standards. At a minimum, the submitted plan shall define the following:

- General project description and scope;
- The major components of the approved project scope and deliverables,
- Typically, deliverables will be submitted at the 30%, 60% and 90% design completion stage prior to 100%, or final, submission;
- The QA/QC responsibilities of the submitted organizational chart by position, name, and company for the various levels of review and accountability within those defined areas;
- The components of QA and QC required to develop this City project;
- The frequency of specific QA activities and QC reviews;
- The methods of documenting QA/QC activities/reviews and individual accountability including, but not limited to the submittal of redline markups at each subsequent submittal level; and,
- The relationship of these procedures with project milestones and schedule.

9.3 SCHEMATIC PREPARATION

The submission of schematic layouts shall include the basic information necessary for the proper review and evaluation of the proposed improvement. On some projects, and only with written approval from the City, schematic submissions may be substituted for 30% plans. Due to the varied agency approval processes for preliminary projects, it is essential that schematics contain the required basic information for review. Schematics shall include the following:

- General project information, including project designation, project limits, length, design speed, description, and functional classification;
- Title section on both ends of the schematic roll;
- Existing and proposed roadway and bridge typical sections;
- Locations of interchanges, main lanes, grade separations, frontage roads, turnarounds, ramps, intersections, major driveways, bridges, side streets, water bodies rail crossings;
- Existing and proposed profiles and horizontal alignments of main lanes, ramps, and crossroads at proposed interchanges or grade separations (frontage road alignment data does not need to be shown on the schematic; however, it shall be developed in sufficient detail to determine right-of-way (ROW) needs);
- All proposed roadway alignments shall increase stationing from south to north and west to east unless there is a need to match existing stationing;
- Lane lines and/or arrows indicating the number of lanes;
- Sequence of work outline for traffic control showing basic concept of traffic handling during construction, including preliminary phasing;
- Existing and proposed ROW limits;
- Bridges, bridge class culverts, and other drainage features;
- Geometrics (i.e. pavement cross slope, superelevation, lane and shoulder widths, slope ratio for fills and cuts) of the typical sections of proposed highway main lanes, ramps, frontage roads, and cross roads;
- Location of retaining walls and/or noise walls;
- Existing and proposed traffic volumes and, as applicable, turning movement volumes;
- Existing and proposed control of access lines (if applicable);
- Direction of traffic flow on all roadways;
- Location and width of median openings (if applicable);
- Geometrics of speed change and auxiliary lanes;
- Existing roadways and structures to be closed or removed;
- Existing or proposed railroad lines;
- Edwards Aquifer Recharge/Contributing/Transition Zones;
- Environmental Constraints; and,
- 100 Year Flood Plains.

9.3.1 Schematic Checklist

A checklist is required with each schematic submittal on all projects. All items on the checklist shall be checked or labeled as N/A with an appropriate explanation. The Project Engineer must complete, sign, date and submit the checklist along with each schematic submittal. All unchecked items are considered missing. Refer to the checklist appended to this Section for required items.

9.4 PLAN PREPARATION

Construction plans for roadway and bridge projects in the City of Round Rock must be prepared in accordance with the sheet sequence, content, and guidelines indicated in the subsequent sections utilizing 11" x 17" sheet size.

9.4.1 Organization And Content Of Plans

The plan set can be divided into main sections to reflect the elements of the proposed work.

Standard drawings and standard details cover various design elements that have been approved by agencies, such as TxDOT, incorporated cities, or other local government agencies, for use within their jurisdictional limits. These standard drawings have a fixed format and each drawing has its own unique identification number. If changes are made, they cannot be used as a standard drawing. Instead, they become special details.

Special details are plan sheets detailing various project elements and shall follow each corresponding section of the plan set (i.e. roadway, drainage, structures, utility, erosion control, etc.). These drawings are generated by the Project Engineer and shall include all details necessary to construct the project elements.

Standard drawings, standard details, and project-specific special details shall be incorporated into the plan set and not issued as a separate booklet. The standard drawings, standard details, and special details shall be arranged in an order that best clarifies the work to be accomplished. Typically, these sheets shall follow the plan drawings for each specific element of the project.

Following is a list of these sections in sequential order. Unless directed otherwise, the Project Engineer shall follow this section sequence and adhere to the guidelines regarding the content of each section and each plan sheet within the section.

Refer to the checklist in the Appendix for a summary of items that shall be included in each section.

9.4.1.A Title Sheet
9.4.1.B Index Of Sheets
9.4.1.C Project Layout
9.4.1.D Typical Sections
9.4.1.E General Notes
9.4.1.F Survey Data / Project Control Points
9.4.1.G Alignment Data Sheets

9.4.1.H Estimate And Quantity Sheets
9.4.1.I Summary Sheets
9.4.1.J Traffic Control Plan / Construction Sequence
9.4.1.K Traffic Control Plan Standards & Details
9.4.1.L Roadway Plans (Plan View and Profile View)
9.4.1.M Roadway Standards & Details
9.4.1.N Drainage Plans
9.4.1.O Drainage Standards and Details
9.4.1.P Utility Plans
9.4.1.Q Utility Standards & Details
9.4.1.R Structural Plans
9.4.1.S Structural Standards & Details
9.4.1.T Traffic Signals And Illumination
9.4.1.U Traffic Signal And Illumination Standards & Details
9.4.1.V Pavement Markings And Signing Plans
9.4.1.W Pavement Markings And Signing Standards & Details
9.4.1.X Erosion Control – Permanent / Temporary and SW3P
9.4.1.Y Erosion Control Standards And Details
9.4.1.Z Cross Sections
9.4.1.AA Other

9.4.1.A Title Sheet

The purpose of the Title Sheet is to establish the project location, describe the nature of the proposed work, identify the funding authority and Project Engineer, and show agency and utility approvals.

A complete Title Sheet shall contain the following:

- Proper title and project designation;
- Statement of the project length;
- City logo;
- Roadway classification, design speed, and traffic data;
- Vicinity map;
- Signature blocks for approving officials;
- Governing specifications and date of adoption;
- Copyright statement;
- Exceptions, equations, and railroad crossings; and,
- Registered Accessibility Specialist (RAS) inspection note.

The project designation includes the project name, project number, and the roadway name and number, if applicable. The limits of the proposed construction in relation to the nearest county or state roadway shall also be shown in miles to the third decimal place if the project is contiguous. Plans for multiple-site projects shall refer to, and

include, plan sheets showing the locations or a single exhibit with each site designated by an alpha-numeric label and legend to all designators. A description of the proposed work shall also be included under the project designation.

The project length shall be shown in feet to two decimal places and in miles to three decimal places. The project length shall also be shown inclusive and exclusive of the bridge length and any equations, exceptions, or railroad crossings shall be listed by station numbers and lengths. Show as “NONE” if not applicable.

For a single roadway or contiguous roadways and on all segments of multiple-site or segmental projects, the design roadway classification shall be stated along with the design speed and traffic data. Current average daily traffic (ADT), design year ADT, design hourly volume (DHV), directional distribution (D), and percent of trucks (T) shall be indicated for all segments of each main roadway.

The vicinity map shall be of suitable size showing the project location in relation to nearby highways, nearest towns, railroads, and major streams. County and city boundaries, applicable scale, and north arrow shall also be shown. The beginning and ending stations shall be clearly identified.

Signature blocks are required for approving officials to sign and date the plans. Signature blocks for the Project Engineer and the City of Round Rock Transportation Director shall be provided as a minimum. Signature blocks shall also be provided for local utility interests, where applicable.

Projects that include sidewalks and other pedestrian facilities with an estimated construction cost of $50,000 or more will require an RAS inspection. The following note shall appear on the Title Sheet:

"Registered Accessibility Specialist (RAS) Inspection Required TDLR No. EABPRJ_____."

Include a statement on the Title Sheet if the RAS inspection is not required.

Any governing specifications or specification reference applicable to the project shall also be stated on the Title Sheet. The following copyright statement shall also be added to the Title Sheet:

9.4.1.B Index Of Sheets

The index includes the sheet number and title as they appear on each sheet contained within the plan set. All sheets are to be listed, including omitted sheet numbers. The responsible Project Engineer’s approval note for the use of standard sheets included in the plans must also be incorporated on the Index of Sheets as follows:

*The Standard Sheets specifically identified above have been selected by me or under my supervision as being applicable to the project.

_____, P.E._____Date

9.4.1.C Project Layout

The project layout shall depict the proposed and existing project features. A suitable scale shall be utilized to clearly show project features, such as the beginning and the end of the project, street names, baseline stations, horizontal alignment data, existing and proposed ROW, advance project warning signs, or any other pertinent information not shown elsewhere in the plan set. The project layout shall not be smaller than 1 inch = 400 ft. scale.

The station and coordinates of the beginning and ending project points shall be labeled.

9.4.1.D Typical Sections

Roadway typical sections provide a general illustration, by cross sectional view, of the nature of construction in every segment of the project. The objective is to present all the elements and dimensions of the roadway for every change of existing features or proposed roadway in as simple a way as possible. These sections shall be specific enough to describe the elements of the proposed work, their location, and the material to be utilized.

All plans shall show typical sections for the project, including bridge plans. On projects requiring more than one typical section, the limiting stations for each section shall be shown and may require additional plan sheets for clarification.

The existing typical section shows the approximate widths, depths, and station limits of the existing roadway included in the project. Proposed sections illustrate the depths, dimensions, and station limits for every type of material in the proposed pavement structure. Features, such as ramps, detours, crossroads, barrier, and metal beam guard fence (MBGF), must also be included. Other applicable items with limits that may be shown on the typical sections are retaining walls, curb and gutter, and topsoil and seeding.

Identify all functional elements of the typical section to a relative scale. Show widths in feet, thickness or depth in inches, pavement cross slopes in percent to two decimal places, and side slopes in horizontal to vertical ratios. Show the thickness of each element in the pavement structure in inches. Use notes or tables on the typical section sheet to cover where different pavement structure layers are necessary due to different soil conditions.

For phased construction projects, identify the ultimate typical section. Clearly distinguish the work to be performed under the contract and future construction work. Typical sections reflecting construction phasing shall be shown on the sequence of construction/traffic control plans.

Include tables or notes to illustrate curve widening, relationship of slope ratios to cut and fill heights, slope rounding, and other special treatments.

The grade line shown on the plan and profile sheet, which represents the vertical location of the roadway, is known as the profile grade line (PGL). The PGL and other necessary control points, such as the project baseline and centerline, the roadway centerline, pavement cross slope, and superelevation pivot point, shall be clearly identified on the typical section.

Existing and proposed typical sections shall show existing and proposed ROW.

Every typical section shall contain a set of section limits to which it corresponds along the roadway. These limits are shown through station ranges. The entire project shall be checked to ensure that a typical section has been shown for every segment of the roadway.

Additional information, such as the following, may also be shown on the typical section sheet(s):

- Location of predominant utility lines and their approximate depths;
- Location of storm sewer trunk lines.

Use supplemental typical sections to show variations in special ditches, clearing widths, and rock cuts. Also, use supplemental typical sections to detail curbs, median treatments, slope protection, and channel changes. Place these supplemental typical sections on separate sheets, if necessary, listing the stations where the typical sections apply. Place a note on the plan and profile sheet describing the site-specific work and referencing the appropriate typical section. The Project Engineer's seal, signature, and date are required.

9.4.1.E General Notes

Included in General Notes are items such as basis of estimate, environmental management, tree protection notes, concrete surface finish, traffic control details, variations in slopes, and protection system for structures. The City of Round Rock maintains a master set of general notes from which the Project Engineer can select applicable notes that relate to the project-specific issues.

Quantities for supplementary items shall be shown, and when shown, labeled, "*For Contractor's Information Only*." No quantities that are subject to change due to sequence of construction operations shall be shown. The wording of all general notes needs to be clear, concise, and have only one meaning for uniform interpretations.

General Notes shall be written using active voice and imperative mood whenever possible. Refer to the latest version of TxDOT's Style Guide for Construction and Maintenance Specifications for further information when writing General Notes and Specifications. The Project Engineer's seal, signature, and date are not required.

9.4.1.F Survey Data

Survey data sheet(s) will be required on all projects where an actual field survey has been performed. The survey data includes reference to and description of the horizontal and vertical control used on the project.

Reference to the horizontal coordinate system and the vertical datum used shall be stated. The following statement along with the combined scale factor shall be added:

All distances and coordinates shown are grid/surface values and may be converted to surface/grid by multiplying with/dividing by a combined scale factor of____.

Coordinates, elevation, and descriptions of all project control points shall be included. Description and elevation of all bench marks used to establish project elevations shall also be added to the survey data sheet.

On small projects, the survey data may be included on the project layout sheet. On large projects, it may be beneficial to show the construction alignment or survey alignment in

relation to the control points and bench marks on separate sheets. The project Registered Professional Land Surveyor (RPLS) seal, signature, and date are required.

9.4.1.G Alignment Data Sheets

Alignment data sheets shall (at a minimum) include the following information:

- Curve data (if applicable):
  - PC, PI, PT station and coordinates;
  - Curve radius and degree of curve;
  - Deflection angle;
  - Tangent bearings and lengths.
- Stations and station equations (if applicable);
- Station/offset information (in relation to other alignments within the project limits);
- Project Engineer's seal, signature, and date.

An imported coordinate geometry (COGO) output file is recommended.

9.4.1.H Estimate And Quantity Sheets

The Estimate and Quantity (E&Q) sheet provides a list of all pay items and estimated quantities in the contract. This sheet also provides a space for final quantities once the project is complete. Item numbers, descriptive codes, special provision numbers, item descriptions, units of measurement, and bid alternates are also shown. This sheet is prepared using the Project Quantity Spreadsheet as defined in Section 9.4.1.I.

An E&Q sheet also summarizes the work to be done, if there is more than one project in the plans or if local participation is required to be quantified separately. They also simplify the plans by showing the total quantities of each item of work involved in the construction of the roadway. The Project Engineer’s seal, signature, and date are not required.

9.4.1.I Summary Sheets

These sheets tabulate, combine, and summarize quantities of the various construction items. This summary informs prospective bidders of where to locate work within the plan sheets, the difference between plan quantities and bid schedule quantities, if any, and expands on contract bid schedule information. It also serves as a helpful checklist to the designer to ensure that all elements of the design receive consideration. The Project Engineer shall use a tabulation format that presents the work items in a clear and concise manner that can be easily checked and verified.

Summary of quantity sheets may also show item numbers, descriptive codes, special provision numbers, item descriptions, units of measurement, and bid alternates. In the preparation of the summary sheets, bid items shall be described exactly as shown in the corresponding agency standard item description.

Summary sheets will be prepared using a Project Quantity Spreadsheet in Microsoft Excel to tabulate the various pay items. All of the pay items are to be listed in numerical order and identified by appropriate descriptions. Show any pertinent information by use of remarks or footnotes at the bottom of the summary plan sheet. The engineer’s seal, signature, and date are not required on summary sheets.

9.4.1.J Traffic Control Plan / Construction Sequence

A traffic control plan (TCP) is a special drawing that graphically portrays all traffic control measures required to assure safe passage of traffic and pedestrians through and/or around a specific project construction zone. It also ensures the safety of construction personnel, provides protection to construction equipment, and minimizes the accident level within the project limits.

TCP's may range from simple line diagrams for low-volume rural roads to complex plan sheets detailing every stage of the project work on high-volume urban highways. Refer to the Transportation Criteria Manual Section 6 for guidance on TCP content and layout.

If different construction stages or intricate traffic movements are needed, then suggested sequence of work sheets shall be provided. In addition, in order to clarify the work zone widths and traffic handling methods, typical cross sections shall be provided for each construction phase. Barricade and construction standard sheets shall also be included within the plan sets.

A narrative summarizing the general traffic operations and general construction operations for all phases shall be provided. The steps within each phase shall also be included for the suggested sequence of construction. All applicable traffic control and work sequence general notes shall be added, including the working hours. Per Sec. 44-277 in the Code of Ordinances, working hours in the public right-of-way are generally limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Friday, with lane closures on major thoroughfares limited to the hours between 9:00 a.m. and 4:00 p.m.

The Sequence of Construction shall include construction staging plans that detail the recommended phasing of project improvements. Staging should maximize mobility and safety during construction, while considering ease of construction.

Detours may be required to maintain traffic during certain construction stages. The Sequence of Construction shall consider safe operation for pedestrians and bicyclists in all stages of construction as well as continuous, safe access to all properties. Construction markings, traffic control devices, and barriers should be designed with this goal.

Detailed layout and arrangement of work zone signs, work zone pavement markings, traffic control devices, and drainage facilities should be provided for each construction stage.

TCP's shall be prepared in accordance with TMUTCD Chapter 6, "Temporary Traffic Control." The Project Engineer's seal, signature, and date are required.

9.4.1.K Traffic Control Standards & Details

Special traffic control details may include drawings detailing construction phasing, traffic control device applications, temporary shoring, or slope treatments.

9.4.1.L Roadway Plans

Roadway plans are also known as the plan and profile (P&P) sheets. The objective of P&P sheets is to show the existing topographic features, the horizontal and vertical alignment of the proposed roadway, and the location and limits of the proposed work. The plan and

profile are typically shown on the same sheet, unless impractical, in which case they may be presented on separate sheets. If the profile is modified, provide P&P sheets for connecting roadways.

P&P sheets shall be prepared at a scale that is adequate to show the necessary details as governed by the topography and the complexity of the work. A scale of 1 inch = 100 ft. or 1 inch = 50 ft. is typically used for roadway plans. Depending on the plan size and amount of information required for the project, varying graphic scales may be utilized. Profiles usually have the same horizontal scale as the plan, but the vertical scale shall be 5 to 10 times the horizontal scale. Where elevation differences are large, a vertical scale of 2 times the horizontal may be more appropriate.

Attempt to place 1,200 ft. *(1 inch = 100 ft.)* on a sheet and always break sheets at even 100 ft. stations. Increasing stationing shall run from left to right. Avoid breaking sheets or placing match lines within intersections.

At a minimum, the following shall be shown on the plan portion of the P&P sheets:

- North arrow, scale, and legend;
- Boundary, county, and city lines;
- Control of access lines, if applicable.
- Bodies of water, such as streams, lakes, swamps, estuaries, or creeks;
- Beginning and ending points and their respective stations;
- Centerline or baseline stationing with labels and tick marks every 100 ft.;
- Horizontal curve and point of intersection data if not shown on the project layout;
- Existing and proposed ROW lines and widths at each break within the project limits;
- Property lines and property ownership;
- Easement lines and widths;
- Full superelevation, normal crown, transition locations and limits with stations;
- All drainage structures with reference numbers;
- Intersection stations of all driveways and connecting roadways;
- Proposed radii at intersection with driveways and connecting roadways;
- Retaining wall locations, if applicable;
- Existing roadway and roadway width;
- Proposed roadway and shoulders, including proposed widths;
- Pavement removal (separate sheets for large projects);
- Limits of Milling (separate sheets for large projects);
- Demolition of structures (separate sheets for large projects);
- Location of borings, test pits, or other sites where subsurface investigations have been made;
- Summary of items and estimated quantities, including excavation, embankment, MBGF, and terminus, which are not detailed on other sheets.

At a minimum, the following shall be shown on the profile portion of the P&P sheets:

- Stations along the bottom and elevations along the sides;
- Proposed profile grade and existing ground lines with labels;
- Points of vertical intersection and vertical curve data;
- Gradients in percent to two decimal places for the PGL;
- K values for each vertical curve;
- Proposed and existing elevations at 50 ft. intervals to two decimal places;
- Culverts, structures, or other proposed facilities;
- Utilities with elevation or depth dimensions, if known, and over and under clearances;
- Existing and proposed bridges and major structures with appropriate reference notation;
- Clearances for railroads, highways, and streambeds under proposed and existing structures.

In order to improve the clarity of P&P sheets, some of the aforementioned information, such as the intersection and driveway details that show pavement contours, sidewalks, shared-use paths, pedestrian ramps, pavement structure, and grades, may be placed on additional sheets.

Driveway quantities shall be tabulated and summarized by driveway, indicating the corresponding plan sheet number. Pavement, roadway incidentals, MBGF, pavement markings, bridges, retaining walls, erosion control, and all other pay items shall be tabulated and summarized on the appropriate plan sheets. These plan sheet quantities shall then be included in the Project Quantity Spreadsheet summary tabulation of the various pay items. It is the intent of this requirement that a Project Quantity Spreadsheet be produced that includes all sheet quantities, tabulation of these individual quantities to produce the summary sheets and the E&Q sheets. The Project Engineer is requested to submit this spreadsheet for assistance in the review process at the 90% and 100% submittals. The Project Engineer's seal, signature, and date are required.

9.4.1.M Roadway Standards & Details

Special roadway details may include drawings detailing grade crossings, turnouts, disposal and borrow site grading treatments, material source locations, removal plans, intersection details, and driveway details. The Project Engineer's seal, signature, and date are required.

9.4.1.N Drainage Plans

Drainage plans generally consist of four elements: (1) drainage area map and hydrologic and hydraulic (H&H) data, (2) hydraulic computations, (3) culvert or drainage structure layouts, and (4) drainage plan and profile sheets. Following is a brief content and format discussion for each of these elements.

Drainage Area Map and Hydrologic & Hydraulic Data:

The size and location of watersheds within the project area are documented on this sheet and used to develop the design flow, which in turn will determine the size of the proposed drainage structures and appurtenances. The contents of an area map include

major tributaries or streams being crossed, major highways and streets, and drainage area limits. Each drainage area needs to be labeled for runoff table cross-referencing and the location of structures and/or stream crossings.

Hydraulic Computations:

This sheet is used to verify the structure design and to present calculations. Culvert hydraulic calculations consist of a runoff table and a culvert computation table. Additional tables shall be shown for storm sewer runs, inlet computations, and ditch capacity/velocity calculations. In general, runoff computations shall indicate the method used (Rational or United States Geological Survey (USGS), the intensity values, runoff coefficients, and the design storm. Projects containing ditches shall include a listing by station of ditch depth, capacity, and velocity calculations for all proposed ditches. Including the computer generated analysis results in the plans is preferred for culvert sizing, storm sewer runs, and inlet computations.

For major stream-crossing bridge structures, the hydrologic and hydraulic (H&H) computations are summarized in a drainage report, also referred to as the H&H Report. The results of the study are also summarized on a drainage area map that is included in the plans. One drainage area map sheet is required per structure. This sheet shall include a drainage area map showing the location and limits of the watershed, a typical stream cross section, a bridge summary table showing peak discharges and water surface elevations, a cross section summary table, gage station analysis and summary (if applicable), design storm frequency, hydraulic software utilized, and runoff computation method used.

Culvert or Drainage Structure Layouts:

Each proposed crossing culvert, including bridge-class culverts, shall have a cross section/profile showing the work to be done and the description of the culvert. Bridge-class culverts, which are culverts with a width of 20 ft. or more along centerline of the roadway, must include a National Bridge Inventory (NBI) number. This sheet is also referred to as the culvert layout. Below is a list of items that shall be shown on the culvert layout sheet.

- North arrow and horizontal and vertical scales;
- Existing ground and proposed grade lines;
- Direction of flow and flowline elevations;
- Centerline of roadway, structure centerline, and skew angle;
- Beginning and ending stations of the structure with flowline elevations;
- Structure slope and upstream and downstream channel slopes;
- Length of structure;
- Type of end treatment including details;
- Roadway cross section along culvert, roadway width and clear zone dimension;
- Description of existing and proposed structure with appropriate standards;
- Hydraulic data (headwater and tailwater elevations for design year and 100-year events);

- ROW and easement lines

Culvert layout sheets are generally prepared at a scale big enough to fit the structure graphics and all the associated labels. The vertical to horizontal scale ratio is generally 2:1. The horizontal scale for drainage structure cross sections is typically *1 inch = 10 ft*. Smaller scales may be used in order to fit long culverts on a single sheet.

Drainage Plan and Profile Sheets:

The drainage plan and profile (P&P) sheets are required mainly on roadways with storm sewers. On projects with open roadside ditches, drainage P&P are not required, but ditch profiles shall be included on roadway P&P sheets. The drainage P&P sheets are typically prepared at the same horizontal and vertical scales of the roadway plans. The plan view shall show the location of inlets, storm sewers, culverts, and ditches, while the profile view shall show the storm sewer run information, such as length, size, and type. Existing ground, proposed grade lines, design year and 100-year hydraulic grade line (HGL), existing utilities, and trench excavation protection limits shall also be shown on the profile view. The Project Engineer's seal, signature, and date are required.

9.4.1.O Drainage Standards & Details

Special drainage details may include drawings detailing inlet modifications, pipe bedding, reinforced concrete pipe connections, flume, or channel details. The Project Engineer's seal, signature, and date are required.

9.4.1.P Utility Plans

Include existing utilities on roadway P&P sheets, unless proposed utilities are needed, then separate utility plan sheets should be considered. In general, utility owners are responsible for utility adjustments/relocations within existing ROW. Thus, utility plans are not required. Refer to the Transportation Criteria Manual Section 8 for additional information on the process and preparation of the utility adjustment/relocation plans. Utility P&P sheets shall be prepared at the same scale as the roadway P&P sheets. The Project Engineer's seal, signature, and date are required.

9.4.1.Q Utility Standards & Details

Special utility details may include drawings detailing water and wastewater pipe connections, thrust blocks, joints and other appurtenances. The Project Engineer's seal, signature, and date are required.

9.4.1.R Structural Plans

Structural plans are required on all projects with proposed structures. Proposed structures include either retaining walls or bridges.

Retaining Walls:

Structural plans for retaining walls include wall layouts, typical sections, geometry data, and details. Retaining wall layouts shall include plan and profile views prepared typically at *1 inch = 20 ft.* utilizing a vertical scale factor of 2:1. The profile

view shall show the front face of wall. All applicable items mentioned below for the bridge layouts shall be considered in the preparation of the retaining wall layout sheets. In addition, wall layouts shall include top of wall elevations as well as existing and proposed ground lines and elevations.

Typical sections for retaining walls shall include information such as pavement and graded slopes and widths, barrier or rail type and location, and proposed roadway reference. Geometry data sheets for retaining walls shall include sufficient information to enable the contractor to construct the walls. For mechanically stabilized earth (MSE) type walls, this information shall include tieback identification and location, wall height, panel width and length, and panel area.

Details for retaining walls may include structural, drainage, or miscellaneous drawings detailing the design and construction of these elements. The Project Engineer's seal, signature, and date are required.

Bridges:

Structural plans for bridges consist of bridge layouts, typical sections, foundation data, bearing seat elevations, and structural details. Each bridge shall have a bridge layout sheet that includes a plan view and a profile view (elevation). Bridge layouts shall be prepared at *1 inch = 20 ft.* scale with 2:1 vertical scale factor. The following is a list of items that shall be included on the bridge layout plan view:

- Centerline or PGL (bearing and location)
- Structure's beginning and ending stations and elevations
- All bent stations and bearings
- Armor joint type, location, and size of seal (if needed)
- Width of roadway and shoulders
- Approach slab and curb returns
- Direction of traffic and/or stream flow
- North arrow and plan scale
- Identification and location of test holes
- Horizontal clearances (i.e. for structures, utilities, railroad tracks, etc.)
- ROW (if applicable)
- Horizontal alignment data (if applicable)
- Cross slope and/or superelevation (if applicable)
- Limits of riprap and blockout around column
- Skew angle(s) of structure and/or bents
- Railing type (specify rail type and show nominal face of rail)
- Exterior beam line numbers (consistent with span details)
- Pedestrian / bicycle accommodation (if applicable)
- Features being crossed
- Utility identification and locations

- Summary of bid items and estimated quantities (can be a separate sheet)
- Railroad Exhibit A (if applicable)

The profile view of the bridge layout shall have the following:

- Overall length of structure;
- Lengths and types of units/spans;
- Overall length, limits of payment, and type of railing (rail post spacing if needed to clear slab joints);
- Vertical curve data and grade;
- Beginning and ending structure stations and elevations;
- Fixed/expansion conditions at all bents;
- Beam ends marked doweled or open;
- Minimum calculated vertical clearances and other clearances as required (e.g. structures, utilities, railroad tracks, etc.);
- Existing and proposed ground lines clearly marked;
- Appropriate hydraulic data (if applicable);
- High-water elevation (if applicable);
- Scour information (if applicable);
- Datum elevations and stations;
- Column heights;
- Number, size, length, and type of foundations;
- Test holes, data, and information;
- Bent numbers clearly marked;
- Clearance sign(s) and any other needed signs attached to bridge(s);
- NBI number or the permanent structure number (PSN);
- Limits and type of riprap;
- Design speed, ADT, and functional classification.

Bridge typical sections shall include an overall roadway width, shoulder width, curbs, concrete medians, sidewalks, cross slopes, and railings. The section shall also include reference to its location and shall highlight the main elements of the structure, such as the beams, deck, railing, and barrier.

Structural details pertain to drawings detailing the design and construction of abutments, bents, slabs, footings, framing plans, and wing walls.

Applicable TxDOT standard drawings may be used in lieu of preparing structural detail sheets. The Project Engineer's seal, signature, and date are required.

9.4.1.S Structural Standards & Details

Special structural details may include drawings detailing prestressed concrete panels, permanent metal deck forms, optional drilled shaft reinforcing, and concrete riprap for

embankment slopes under bridge ends. Refer to Transportation Criteria Manual Section 8 “Structures in the Right Of Way and in Easements” for additional information. The Project Engineer’s seal, signature, and date are required.

9.4.1.T Traffic Signals, Illumination & Traffic Management Systems

This section includes proposed project elements in the following three main areas: (1) traffic signals, (2) electrical and illumination work, and (3) traffic management systems (TMS). The following is a brief discussion and a list of the plans that shall be included for each of these areas.

A traffic signal plan shall be prepared for each intersection or approach that includes the following proposed traffic signal elements:

- Signal layout sheet (e.g. signal pole and mast arm locations, conduit runs, loop detectors, traffic lanes, signal head arrangements, etc.);
- Signal elevation sheet (e.g. elevation views from all directions showing signal head arrangement, signal pole types, and appendances);
- Signal wiring and signal phasing sheet;
- Summary sheet.

Similar drawings will be required for temporary traffic signals required during the various construction phases. Signal layouts shall be prepared utilizing 1 inch = 40 ft. scale.

Electrical and illumination layout sheets shall include:

- Layouts of lighting pole and luminaire;
- Lighting details;
- Electrical service;
- Conduit run locations.

These plans shall be prepared at the same scale as the roadway plans. On small projects, the proposed electrical and illumination elements can be shown on the pavement markings and signing plans. A quantity summary with sheet totals shall be included on each sheet. Voltage drop calculations for the various circuits will be a requirement at the 60%, 90%, and 100% submissions.

TMS plans, if needed, denote surveillance and control system items, such as traffic cameras, changeable message signs, vehicle detection, conduit runs, and any other intelligent transportation system. These plans shall also be prepared at the same scale as the roadway plans. The Project Engineer’s seal, signature, and date are required.

9.4.1.U Traffic Signal And Illumination Standards & Details

Special traffic signal details may include drawings detailing signal pole foundation, signal support structures (single mast arm assembly), and electrical details-conduit.

9.4.1.V Pavement Markings And Signing Plans

The pavement markings and signing plans depict the location, type, color, dimensions, and standard number of all proposed markings and signs. These plans shall include both pavement marking and signing elements on the same plan and shall be prepared at the same scale as the roadway plans. On large and complex projects, the pavement markings and signs may have to be placed on separate plans for clarity and simplicity.

In addition to the pavement marking and sign plans, this section shall also include overhead sign and elevation details, bridge sign details, large and small sign details, and miscellaneous sign details. These details shall show the location, size, and dimension of the panel, support, mounts, and accessories of all proposed sign structures as necessary. These details shall be developed at a scale sufficient to clearly show the proposed elements and labels.

All pavement markings and sign plans shall be in accordance with the latest edition of the TMUTCD. SignCAD software shall be used to create customized signs not included in the Standard Highway Sign Designs for Texas. The Project Engineer's seal, signature, and date are required.

9.4.1.W Pavement Marking And Signing Standards & Details

Special pavement marking and signing details may include drawings detailing delineators, object markers, pavement markings, pavement markers, sign mounting, and signs.

9.4.1.X Erosion Control

The plan sheets for the erosion control plan, including the Storm Water Pollution Prevention Plan (SW3P), are drawings that detail the measures required to protect resources and to comply with environmental permit stipulations. These drawings shall be prepared in accordance with the City's Stormwater Management Program and MS4 Permit, and shall be in compliance with the stipulations in the Texas Pollutant Discharge Elimination System (TPDES) permit.

These sheets address temporary erosion control measures during project construction as well as any permanent erosion controls that are required. An SW3P sheet and erosion control plans are required for any project with soil disturbance. As a minimum, the first sheet of the erosion control plan is the SW3P, which is the narrative portion, and any additional sheets would show the locations and types of any erosion control features needed. Erosion control plans shall be prepared at the same scale as the roadway plan. The SW3P shall comply with the approved Water Pollution Abatement Plan (WPAP), if applicable.

While not a required plan sheet, a WPAP is required for any regulated (i.e. construction) activity conducted in the Edwards Aquifer Recharge Zone. A WPAP is a detailed plan that outlines best management practices (BMPs) that will be implemented in order to protect water quality when a regulated activity is conducted in the Edwards Aquifer Recharge Zone. The WPAP must be submitted and approved by Texas Commission

on Environmental Quality (TCEQ) prior to construction for any project located over the Edwards Aquifer Recharge Zone.

9.4.1.Y Erosion Control Standards & Details

Special erosion control details may include drawings detailing sediment control fence, rock filter dams, and tree protection. Additional special details may be necessary to detail grading, wetland restoration, and vegetation replacement for projects with wetland impacts or/and mitigation.

Commitments for environmental mitigation features, which are contained in the environmental documentation, shall be detailed as necessary and included in the project plans as special details and/or shown at the end of the Erosion Control Standards and Details section. The Project Engineer's seal, signature, and date are required.

9.4.1.Z Cross Sections

Sufficient information shall be shown on each of the sections to accurately determine the extent of the proposed work. A scale of *1 inch = 20 ft.* is typically used for cross sections. The horizontal to vertical scale is typically 2:1 resulting in a vertical scale of *1 inch = 10 ft.* If this scale is unsuitable, use more appropriate scale to show the extent of the proposed work.

Cross sections shall be cut at 50 ft. intervals and at all cross streets. Earthwork quantities on all projects shall be based on cross sections spaced at 50 ft. maximum.

Cross sections shall also show the existing and proposed grade lines depicting the slopes, widths, and depths of proposed material. Offsets and elevations of all critical segment points shall also be shown. ROW and easement lines shall be clearly marked.

9.4.1.AA Other

Additional plan sheets may be required to address issues, such as material source rehabilitation, disposal or borrow area restoration, intersection details, special landscaping plantings, and other enhancements. If there is a substantial amount of demolition work to be done, separate plan sheets (removal layouts) showing the proposed demolition work shall be utilized.

9.4.2 Sealing Plans

All original final plan drawings, except for Estimate and Quantity, Summary, and Standard sheets, are to be signed, sealed, and dated by a registered Professional Engineer (P.E.) or a registered Professional Land Surveyor (RPLS) as appropriate under current Texas law.

Either an original signature or an electronic signature will be accepted as detailed in Statutes' *Regulation of Engineering, Architecture, Land Surveying, and Related Practices* (6 Tex. OCC).

All interim submittals shall include a preliminary stamp with the registered professional name and license number along with the submittal date. This stamp shall state the preliminary nature of the plans and that they shall not be used for bidding or construction.

Any changes made to the plans prior to letting will have to be coordinated between the City and Project Engineer, approved by the Project Engineer, and plans shall be signed, sealed, and dated as stated above. The Project Engineer shall be aware of any necessary changes made to the plans after letting; however, the Project Engineer will not be liable for any changes made to the plans without his/her consultation.

9.4.3 Copyright Data

As mentioned previously, the County copyright statement shall be added to the Title Sheet:

© 20xx by City of Round Rock, Texas. All rights reserved.

On all other sheets, except for the standard plan and standard detail sheets, an abbreviated form of the copyright statement can be used:

© 20xx City of Round Rock, Texas.

9.4.4 Plan Checklist

A checklist is required for each PS&E submittal on all projects, which is provided by the City. See Section 9.6 for more information. All items on the checklist shall be checked or labeled as *N/A* with an appropriate explanation. All unchecked items are considered missing.

9.4.5 PS&E Package

A PS&E package shall be submitted for each project at various submittal levels. The PS&E package is to be prepared by the Project Engineer and shall include the following (refer to corresponding checklists):

- Plans – Refer to Transportation Criteria Manual Section 9.4.1 for more information. Plans shall be signed and sealed for the Final PS&E submittal.
- Technical Specifications – The Project Engineer is responsible for the preparation of all special contract requirements, including special specifications and modifications to standard specifications relating to an individual project.
- Project Manual – The Project Engineer shall obtain the current project manual and bidding documents from the City for use in the preparation of the final PS&E package. The template indicates where project information is inserted by the Project Engineer. No other revisions to standard bidding documents are to be made by the Project Engineer.
- Project Engineer's Cost Estimate – The Cost Estimate shall be prepared for construction quantities covering all items of the proposed work. The Cost Estimate shall include, according to bid item order, a separate line for each item, and a total block at the end of the last page. The total block shall include a summary of each of the section subtotals and a grand total. The item line shall

include the item code, item description, unit, quantity, estimated unit cost, and total item amount. Cost Estimates shall include appropriate non-bid items, including force account items. The Project Engineer is not required to estimate costs for preliminary engineering, construction engineering, utility relocation, or ROW acquisition. A statement shall be included that defines the prices as current or contains inflation percentages for future date consideration.

- Geotechnical Engineering Report – Use acceptable standard practices in performing and documenting the geotechnical engineering work for all City roadway projects. These practices include field surveys, field operations, soil and rock classifications, wall and structure design, soil stability, and undercutting recommendations (refer to the Transportation Criteria Manual Section 8 and TxDOT's Geotechnical Manual for more detailed information regarding geotechnical engineering). The geotechnical engineering report shall also include pavement design for the project. Refer to Transportation Criteria Manual Section 3 for detailed information on required design effort.
- Drainage Report – Use acceptable standard practices in performing and documenting the hydrology and hydraulics used to design drainage structures and systems throughout the project. These practices include data collection, field surveys, hydrologic and hydraulic analysis, and a summary of conclusions and recommendations. Refer to the TxDOT Hydraulic Design Manual for more detailed information regarding drainage reports.

9.4.6 Bid Documents

In addition to the PS&E package, the Project Engineer will be responsible for the preparation of the Project Manual (Bid Documents) including:

- Cover Page (signed and sealed)
- Bid Addenda (refer to Section 9.5.1.1)
- Bid Form
- Technical Specifications
- Plan Drawings
- Geotechnical Report (refer to Section 9.4.5)

A typical Table of Contents will include the following, at a minimum:

Section	Description
00020	Notice to Bidders
00100	Instructions to Bidders
00200	Bid Bond
00300	Bid Form
00410	Statement of Bidders Safety Experience
00500	Agreement
00600	Insurance and Construction Bond Forms Performance and Payment Bond Instructions Insurance Instructions
00610	Performance Bond
00620	Payment Bond
00650	Certificate of Liability Insurance

00700	General Conditions
00800	Supplemental General Conditions
00900	Special Conditions
01000	Technical Specifications (refer to Section 9.4.5)
02000	Plans, Details and Notes (refer to Section 9.4.1)

The Project Engineer shall furnish one (1) hardcopy of the original signed and sealed Title Sheet and Project Manual cover page of the final bid documents to the City along with PDF and required native file formats.

9.5 PROJECT BIDDING PHASE

The purpose of this section is to outline the basic steps that must be taken in preparation for the advertising, bid opening, and awarding of City projects.

9.5.1 Process

After the PS&E assembly is deemed complete and the City gives approval to advertise the project, the following steps must be taken:

9.5.1.1 Advertisement

The City will notify the Project Engineer of the scheduled pre-bid meeting and bid opening date. The Project Engineer must attend the pre-bid meeting. The Project Engineer shall bring one (1) set of bid documents (plans and project manual) and be prepared to respond to Contractor questions. The Project Engineer will prepare and distribute addenda as needed.

9.5.1.2 Bidding

The Project Engineer shall attend the bid opening and receive one (1) copy of each bid submitted.

9.5.1.3 Award

The Project Engineer shall review the bids and check for errors or obvious imbalances. The Project Engineer shall also prepare and submit the bid tabulation and written recommendation regarding award of the contract to the City.

9.5.1.4 Post-Award / Pre-Construction

The Project Engineer will attend the pre-construction meeting with the Contractor if requested by the City and shall be prepared to answer any questions the Contractor may have regarding the bid documents.

9.5.1.5 Construction

The Project Engineer will review submittals and shop drawings on request. The Project Engineer will respond to Requests for Information (RFI) submitted by the Contractor in a timely manner and prepare requested plan revisions.

For projects requiring a WPAP, Project Engineer will be required to inspect BMPs and provide a certification letter as required by TCEQ when Construction is complete.

9.5.1.6 Record Drawings

Prior to City acceptance of new transportation facilities, the transportation as-built plans must be submitted electronically. They must be submitted electronically in shapefile format (projectname_transschem.shp). The file shall be georeferenced to the State Plane Grid Coordinate System – Texas Central zone (4203) or may be in surface coordinates provided it contains a minimum of two (2) survey points referenced to the City of Round Rock Control Network and be labeled in US feet. It must also include rotation information and the scale factor required to convert the surface coordinates to grid coordinates.

Other electronic versions of the transportation as-built plans may be accepted but only with express approval from the Transportation Department. PDF, JPEG, TIF, or other types of image files will not be accepted. This requirement is in addition to the submittal of the sealed Record Drawings.

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9.6.A Design Summary Report

DESIGN SUMMARY REPORT (DSR)

The DSR summarizes a basic project information in one document. Use judgment in completing the report since it covers a wide range of items that may not apply to all projects.

This report can be partially completed during the *Preliminary* Design Conference and updated throughout project development. The DSR will be reviewed in detail during the Design Conference.

Note: This Form is a record of the plan development and shall be retained for the life of the project.

Highway No.: _____

Name: _____

Length: _____

Project No.: _____

Limits From: _____

To: _____

Is project on National Highway System (NHS)? ☐ Yes ☐ No

If yes, does project require: ☐ State oversight ☐ Federal oversight

Type of work: _____

_____

Layman's description: _____

_____

Estimated construction cost:_____ Date of estimate: _____

Estimated right of way cost:_____ Date of estimate: _____

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Programming and Funding Data

Working Program: _____ Authorized Funds: _____ STIP Year: _____

Breakdown of Funding Participation

	Preliminary Engineering		Construction		Right of Way		Eligible Utility Relocation	
	%	$	%	$	%	$	%	$
Federal								
State								
County								
City								
Totals								

Sidewalk funded by: _____

Curb and gutter funded by: Storm _____

drain system funded by: _____

Illumination to be maintained by: _____

List and describe active Minute Orders and agreements: _____

_____

Are advance funding agreements required? If ☐ Yes ☐ No

yes, describe: _____

_____

Is unusual financing required? If ☐ Yes ☐ No

yes, explain: _____

_____

If program estimate differs from authorized amount, explain overrun/underrun: _____

_____

_____

See attached copy of current cost estimate.

Tentative letting date: _____ Date of PS&E submission to City: _____

Should letting date be rescheduled? ☐ Yes ☐ No If yes, recommended letting date: _____

Existing Elements

A. Existing typical section

1. No. of traffic lanes: _____ 2. Lane Width: _____ 3. Shoulder Width: _____

4. Median Width: _____ 5. Curb & Gutter: ☐ Yes ☐ No

B. Existing bridge data (including bridge-class culverts)

Stream Name	Structure Number	Structure Length	Structure Type	Date of Construction	Sidewalk Width	Clear Rdwy. Width	Sufficiency Rating

C. Existing cross drainage culvert data

Station	Number of Barrels	Sizes	Type (shape & material)

D. Stream Data

1. Will channel work be required? If ☐ Yes ☐ No
yes, linear feet disturbed? _____ Are permits needed? ☒ Yes ☐ No

2. If bridge shafts must be drilled in channel or stream bed, how will drilling rigs gain access? (e.g., cofferdams, drilling pads, or access roads) _____

E. Other (e.g., stock pass): _____

F. ROW Data

1. Existing ROW width: _____ 2. Estimated number of land owners: _____

3. Predominant land use: _____ 4. Soil types: _____

G. Existing constraints

1. Eligible historical structures: _____
2. Schools: _____
3. Parks: _____
4. Archeological sites: _____
5. Potential hazardous material sites: _____
6. Ecological (wetlands, habitats, etc.): _____
7. Airport (notify FAA, FAA Form 7460-1): _____
8. Other: _____

H. Highway-railroad (RR) grade crossings

1. Owner of RR: _____
2. Type of RR crossing surface material: ☐ concrete ☐ rubber ☐ wood
3. Type of warning devices: : ☐ passive ☐ cantilever flashing lights ☐ lights and gates ☐ mast signals
4. Do opportunities exist for consolidating or closing RR crossings? ☐ Yes ☐ No
5. Is there a highway-RR grade crossing adjacent (i.e., within about 500 ft) to a signalized highway intersection? ☒ Yes ☐ No
6. If yes, responsible office for determining the need for preemption: _____

I. Has crash analysis been performed? ☐ Yes ☐ No

Advanced Project Development Elements

A. Surveying

1. Is planimetric needed? ☐ Yes ☐ No
2. Status of aerial photography: ☐ Complete ☐ In progress ☐ Not started ☐ Not proposed
3. Status of field surveys: ☐ Complete ☐ In progress ☐ Not started
4. Has vertical and horizontal control been established on the ground? ☐ Yes ☐ No
5. Additional elements to be surveyed (drainage channels, intersecting streets, etc.)

_____

6. Is existing ROW staking required? ☐ Yes ☐ No
   Status: ☐ Complete ☐ In progress ☐ Not started Responsible office: _____
7. Comments: _____

B. Schematic development

1. Is a geometric schematic required? ☐ Yes ☐ No If yes, responsible office: _____
2. Is a signing schematic required? ☐ Yes ☐ No If yes, responsible office: _____
3. Schematic status
   a. Percent Complete _____% b. Approval authority: ☐ FHWA ☐ TxDOT ☐ CoRR
   c. Need preliminary schematic by: _____ d. Need approved schematic by: _____ e. Approval date: _____
4. Comments: _____
5. Public Hearing: ☐ Scheduled ☐ Opp. Afforded ☐ Held ☐ Not Required Date: _____
6. What type of 3D model will be developed? (Choose all that apply) ☐ Basic Corridor Model ☐ Automated Machine Guidance
   ☐ Visualization Model ☐ Contract Model Comments: _____

C. Environmental Commitments & Issues

1. Anticipated type of environmental document required: ☐ CE ☐ EA ☐ EIS
2. Office responsible for preparing environmental document: _____
3. Has environmental document been approved? ☐ Yes ☐ No
4. Public Meetings: ☐ Proposed ☐ Not Proposed ☐ Scheduled ☐ Held ☐ MAPO
   Dates: _____
5. Public Hearing: ☐ Scheduled ☐ Opp. Afforded ☐ Held ☐ Not Required Date: _____
6. Environmental commitments
   a. Noise _____
   b. Air quality _____
   c. Wetlands/Section 404 Permit: _____
      1. Individual permit required? _____
      2. Nationwide permit required? _____
   d. Water quality: _____
   e. Natural Resources: _____
      1. Vegetation: _____
      2. Endangered species: _____
      3. Other: _____
   f. Cultural resources _____
      1. Archeology: _____
      2. Historical: _____
   g. Social, economic, environmental justice: _____
   h. 4f, 6f: _____
   i. Other: _____
7. Are hazardous materials issues anticipated? ☐ Yes ☐ No
8. Environmental Issues Permits Commitments (EPIC) Sheet completed? ☐ Yes ☐ No
9. Office responsible for fulfilling commitments: _____
10. Comments _____

Proposed Right of Way & Utility Elements

A. Right of way elements

1. Usual ROW width: _____
2. Additional ROW needed to accommodate design features (side slopes, sound walls, etc.)

   _____
3. Have adjacent property owners been identified? ☐ Yes ☐ No
4. Is additional ROW required? ☐ Yes ☐ No
5. How many parcels will be involved in ROW acquisition? _____
6. Are easements required (drainage or construction? ☐ Yes ☐ No
7. Is control of access needed? ☐ Yes ☐ No
8. Have ROW map/plats/descriptions been prepared for parcels? ☐ Yes ☐ No
9. Is relocation assistance required? ☐ Yes ☐ No
   a. Number of residences: _____
   b. Number of businesses: _____
   c. Other improvements: _____
10. Comments: _____

    _____

    _____

B. Major utility facilities

1. Preliminary utility inventory

Utility	Type	Describe potential conflict

2. Have utility conflicts been determined? ☐ Yes ☐ No
3. Has Subsurface Utility Engineering been requested or performed to locate utilities? ☐ Yes ☐ No
4. Have utility agreements been prepared through district ROW office? ☐ Yes ☐ No

   Comments: _____

   _____

Proposed Geometric Design Elements

Note: Design features listed in tables may not apply to every project.

Functional classification (select one):

☐ freeway ☐ arterial ☐ major collector ☐ minor collector ☐ local

Highway type (select one): ☐ urban freeway ☐ urban frontage road ☐ rural freeway ☐ rural frontage road

☐rural two-lane ☐ suburban roadway ☐ urban street ☐ bike/pedestrian trail ☐ rural multilane

Proposed work (select one): ☐ 4R/new construction ☐ 3R ☐ 2R Terrain (choose all that apply): ☐ level ☐ rolling

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A. Traffic

Street	Existing ADT	ADT (letting year)	ADT (design year)

Unless the City of Round Rock provides this data, submit five-year and twenty-year forecasts of average daily traffic volumes including traffic loadings by axle load spectrum or vehicle classifications as defined by the FHWA on existing and proposed roads and streets within or affected by the facility.

B. Design criteria

	Design Guidelines			Existing Value	Proposed Value
Design Elements	**Minimum**	**Desirable**	**Figure/Table**		
Design speed					
Maximum horizontal curvature					
Maximum superelevation rate					
K value - sag					
K value - crest					
Maximum grade					
Minimum grade					
Other:					

C. Roadside features **(See attached typical sections.)**

Roadside Feature	Unit	Value	Comments
Border	width		
Sidewalk Location:	width		
Cross slope - sidewalk	%		
Ditch front slope -usual	ratio		
Ditch front slop - maximum	ratio		
Ditch back slope - usual	ratio		
Ditch back slope - maximum	ratio		
Maximum fill height before retaining wall	height		
Clear zone	width		
Other:			

ROUND ROCK TEXAS

Proposed Geometric Design Elements (continued)

D. Roadway surface features **(See attached typical sections.)**

Roadway Feature		Dimension	Comments
Thru Lanes	**Proposed**		
	Ultimate		
Other Longitudinal elements	**Bike Lane (on-street)**		
	Shared-use curb lane		
	Parking		
	Bridge width		
	Curb offset		
Shoulders (ML)	**Inside**		
	Outside		
Median	**Raised**		
	Flush		
	Depressed		
	Opening spacing		
	Opening width		
Speed Change Lanes	**Lane width**		
	Storage length		
	Taper length		
	Shoulders		
Cross Slopes	**Thru lanes**		
	Shoulders		
Structure clearances	**Horizontal**		
	Vertical		

In order to accommodate OS/OW loads on frequently permitted routes, design consideration for vertical clearance on new structures should not be limited to other vertical clearances along the route. Even though it may take a generation or longer to increase vertical clearance throughout a frequently permitted route, progression toward that goal has to be considered for each new structure in conversation with the Transportation Director's office and City Highway maintenance personnel.

When selecting lane widths, horizontal and vertical clearances, pavement designs and turning radii at intersections consideration should be given to whether the facility is already a permitted or possibly permitted as an oversize and overweight (OS/OW) load route. The Transportation Director's office or the City's Maintenance Records could provide useful information in making this determination. To accommodate the overheight loads increased vertical clearance could be considered, as well as consider the option to design the facility carrying the OS/OW loads to go over the other facilities. Providing increased lane widths and performing evaluations of the pavement designs using the "Modified Texas Triaxial Design Method" will ensure accommodation of wide and overweight loads and help with deterioration of pavements and save on the system's maintenance costs.

E. Connecting roadways **(See attached typical sections.)**

Design Element	Ramps	Direct Connectors	Crossroads
Design speed			
Maximum horizontal curve			
Maximum grade			
Minimum grade			
Proper number of lanes			
Lane width			
Inside shoulder			
Outside shoulder			
Other:			

F. Are design exceptions/waivers required? ☐ Yes ☐ No

If yes, what design elements? _____

_____

Proposed Bridge Design Data

A. Design data for structures

	Structure Number	Structure Location	Clearance		Clear Rdwy. width	Length	Over-pass OR under-pass	Foundation type	Super-structure type	Sub-structure type
			Horiz.	Vert.						
1										
2										
3										
4										
5										
6										

Structure Number (repeat from above)	Railroad crossing? (Yes/No)	Type of Existing Rail	Type of Proposed Rail	Proposed approach treatment	Turn-arounds provided? (width)	Retaining walls proposed? (type)	Bridge widening (describe existing & proposed)	Are bridge design exceptions/ waivers required? If yes, for what design elements?	
									1
									2
									3
									4
									5
									6

B. Bridge widths are for: ☐ proposed number of lanes ☐ ultimate number of lanes

C. Are bridge widths controlled by traffic handling? ☐ Yes ☐ No

Proposed Hydraulic Elements

A. TxDOT design frequency

Notes:
Table shown below is in the TxDOT Hydraulic Design Manual.

Shaded boxes denote recommended design frequencies.

When multiple design frequencies are given, select a frequency by checking a box (☐).

Federal law requires interstate highways to be provided with protection from the 50-year flood event, and facilities such as underpasses and depressed roadways where no overflow relief is available should be designed for the 50-year event.

Functional Classification and Structure Type						**Check 100-yr Flood?**
	2	5	10	25	50	
Freeways (main lanes)	☐	☐	☐	☐	☐	
Culverts	☐	☐	☐	☐	☐	Yes
Bridges	☐	☐	☐	☐	☐	Yes
Principal arterials	☐	☐	☐	☐	☐	
Culverts	☐	☐	☐	☐	☐	Yes
Small bridges	☐	☐	☐	☐	☐	Yes
Major river crossings	☐	☐	☐	☐	☐	Yes
Minor arterials and collectors (including frontage roads)	☐	☐	☐	☐	☐	
Culverts	☐	☐	☐	☐	☐	Yes
Small bridges	☐	☐	☐	☐	☐	Yes
Major river crossings	☐	☐	☐	☐	☐	Yes
Local roads and streets (off-system projects)	☐	☐	☐	☐	☐	
Culverts	☐	☐	☐	☐	☐	Yes
Small bridges	☐	☐	☐	☐	☐	Yes
Storm drain systems						
Controlled access highways (main lanes)						Yes
inlets and drain pipe	☐	☐	☐	☐	☐	Yes
inlets for depressed roadways	☐	☐	☐	☐	☐	Yes
Other highways and frontage						
inlets and drain pipe	☐	☐	☐	☐	☐	Yes
inlets for depressed roadways	☐	☐	☐	☐	☐	Yes
Other:	☐	☐	☐	☐	☐	

ROUND ROCK TEXAS

Proposed Hydraulic Elements (continued)

B. If design frequency is other than TxDOT guidelines, where it is to be used and the reason (e.g., to use in designing off system facilities or to comply with FEMA requirements)?

_____

C. Comments on special hydrologic considerations (e.g., Basin is regulated by reservoirs, unit hydrograph and routing techniques in HEC-HMS used in lieu of regression equations):

_____

D. Safety end treatment proposed

Parallel drainage structures: _____

Cross drainage structures: _____

E. Will outfall channels be provided? ☐ Yes ☐ No

If yes, by whom? _____

F. Will outfall channels be maintained by others? ☐ Yes ☐ No

If yes, by whom? _____

G. Will others have to approve hydraulic design? ☐ Yes ☐ No

If yes, by whom? _____

H. Will others participate in funding hydraulic structures (e.g., joint ditch agreements with railroads)? ☐ Yes ☐ No

If yes, who? _____

I. For storm drain design, is there potential for future development that may redirect flows normally away from the project back to the project?

☐ Yes ☐ No

If yes, will the actual "modified" contributing drainage area be used if known or will an estimate of a 150' wide area be used instead when the actual modification is not known?

_____

J. Will pump stations be required? ☐ Yes ☐ No

If yes, approximate locations? _____

K. Is this an evacuation route where roadway elevation is critical? ☐ Yes ☐ No

If yes, explain? _____

L. Is the design of any special drainage facility required? ☐ Yes ☐ No

If yes, explain? _____

M. Which hydraulic programs will be required for analysis? _____

_____

N. Are flood insurance study streams within project limits? ☐ Yes ☐ No

If yes, which streams and what type of map is designated (e.g., Flood Hazard and Boundary Map)?

_____

_____

Proposed Hydraulic Elements (continued)

O. Informal FEMA coordination should always be initiated early in project development to identify any pertinent issues such as the availability or loss of the accumulative 1-foot rise to previous development. Has the informal FEMA coordination revealed any special issues that may require formal coordination (e.g., such as a no remaining rise or the presence of a designated floodway)? ☐ Yes ☐ No

P. Is there any existing development in the floodplain that may be impacted at any stage by changes (no matter how small) brought about by the project, regardless of whether the project meets FEMA standards? ☐ Yes ☐ No

Proposed Pavement Structure Elements

A. Describe existing pavement: _____

B. Is existing roadway load zoned? ☐ Yes ☐ No

Limits From: _____

To: _____

C. Has pavement design been prepared? ☐ Yes ☐ No

Responsible office: _____ Been approved? ☐ Yes ☐ No

D. Proposed pavement structure **(See attached typical sections.)**

Describe thickness and material type of each layer.

Pavement Structure Element	Roadway	Shoulder
Widen existing		
Main lanes		
Frontage roads		
Direct connectors		
Ramps		
Detours		
Crossroads		
Other:		

Proposed Traffic Operations Elements

A. Are signing, delineation, and pavement markings to be included in construction plans? ☐ Yes ☐ No

If yes, responsible office: _____

B. Is signalization proposed? ☐ Yes ☐ No

If yes, are traffic signals warranted? ☐ Yes ☐ No Resp. office for developing plans: _____

C. Is there a highway-railroad grade crossing adjacent (i.e., within about 500 ft. (152 m)) to a signalized highway intersection?

☐ Yes ☐ No If yes, responsible office for determining the need for pre-emption: _____

D. Is safety lighting proposed? ☐ Yes ☐ No

If yes, is illumination warranted? ☐ Yes ☐ No Resp. office for developing plans: _____

E. Is continuous lighting proposed? ☐ Yes ☐ No

If yes, is illumination warranted? ☐ Yes ☐ No Resp. office for developing plans: _____

F. Are Intelligent Transportation System (ITS) items proposed? ☐ Yes ☐ No

If yes, are proposed ITS items included in the regional ITS plan? ☐ Yes ☐ No

Comments: _____

ROUND ROCK TEXAS

Proposed Miscellaneous Elements

A. Geotechnical exploration

1. Roadway

Is geotechnical investigation needed? ☐ Yes ☐ No

If yes, explain: _____

Is geotechnical investigation available? ☐ Yes ☐ No

2. Bridges (list bridges requiring foundation exploration)

_____

3. Walls (list retaining walls or noise walls requiring foundation exploration)

_____

4. Storm drains

_____

5. Miscellaneous (e.g., overhead sign bridges, high mast illumination)

_____

6. Office responsible for geotechnical exploration (borings): _____

7. Is a D_{50} (grain size determination) for scour analysis on the proposed structure at the stream crossing required from the lab?
☐ Yes ☐ No

B. Sequence of construction (Outline probable stages. **See attached typical sections.**)

1. Stage I: _____

2. Stage II: _____

3. Additional stages: _____

C. Will median openings require approval by others? ☐ Yes ☐ No

If yes, by whom? _____

D. Are requirements satisfied for the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Texas Accessibility Standards (TAS)? ☐ Yes ☐ No
Comments: _____

E. Are railroad agreements needed? ☐ Yes ☐ No

If yes, where? _____

F. Are airway/highway clearance permits required? ☐ Yes ☐ No

1. For roadway: _____

2. For other (e.g., high mast illumination: _____

G. What type of erosion control is proposed?

1. Fills: _____

2. Is a stormwater pollution prevention plan (SW3P) proposed? ☐ Yes ☐ No

3. Other: _____

H. Does the project require a Value Engineering Study? ☐ Yes ☐ No

I. Is a Safety Review Committee (or multi-discipline team) review required? ☐ Yes ☐ No

J. Does design address requirements of environmental permits and environmental concerns? ☐ Yes ☐ No

K. Comments: _____

Appendix

Comments and Concurrence

CoRR Comments: _____

_____

_____

_____

_____ _____

Signed Date

_____

Title

TxDOT Comments: _____

_____

_____

_____

_____ _____

Signed Date

_____

Title

FHWA Comments: _____

_____

_____

_____

_____ _____

Signed Date

_____

Title

Note: Concurrence with this report does not imply approval of any design exceptions or waivers referred to herein.

ROUND ROCK TEXAS

Suggested Attendance

Date of conference: _____ Location of conference: _____

	INVITED (name)	**ATTENDED** (name)
City of Round Rock staff		
Transportation Director		
Highway Engineer		
Highway Supervisor		
Traffic Engineer		
TxDOT division offices		
FHWA		
bicycle groups		
city and county		
consultants		
environmental resource agencies		
federal transit authority		
MPO director or staff		
transit operators		
trucking industry		
utility companies		
Others (e.g., Chamber of Commerce)		
1)		
2)		
3)		

ROUND ROCK TEXAS

Suggested Agenda

Prior to the Preliminary Design Conference, experienced district representatives from traffic operations, design, construction and maintenance should visit the site together to review existing conditions.

Background
- existing elements
- funding
- surveys, studies, and data
- agreements and permits
- problematic features
- Feasibility Study or Major Investment Study Findings

Project Scope Corridor

issues
- mobility & transportation
- operations & maintenance
- planned/funded projects

Environmental issues

Multimodal issues Alternatives

Schematics

Public Involvement Plan
- stakeholders
- public meeting and public hearing

Environmental Documents and Commitments made

Detailed Design Criteria Project

development criteria
- Level of Service
- control of access
- geometric design
- hydraulic design
- bridge design
- pavement design
- traffic operations design
- landscape and aesthetic design
- constructability

Right of Way
- new ROW required
- easements required
- utility adjustments
- control of access

Maintenance

Permits, agreements, and coordination with:
- outside entities
- Federal, State, City, or County
- railroads

Site Visit

Planning Stage site analysis of land, location, and possible environmental impacts can improve scope development and reduce key feature(s) oversight. Documents and media files gathered during a site visit by subject matter experts can aid preliminary design and project estimate development.

Site Visit Date(s)	Name	Company/Organization	Role

Suggested Report Material

Consider attaching the following to this report:

PURPOSE AND NEED STATEMENT

*

DRAFT ALTERNATIVES SCREENING AND EVALUATION CRITERIA

*

PUBLIC INVOLVEMENT PLAN

*

PROJECT DEVELOPMENT SCHEDULE

*

DESCRIPTION OF KEY STAFF ROLES AND RESPONSIBILITIES

*

AGREEMENTS REACHED BETWEEN CONFERENCE PARTICIPANTS

*

ATTACHMENTS

Conference minutes or notes
Typical Sections
Proposed Basic Design Data Form
Location Map (optional)

9.6.B Design Exception / Waiver Request

DESIGN EXCEPTION / DESIGN WAIVER REQUEST

Project Description

Project Name: Enter project name

Description of Work: Enter project location and description. Use shift+enter to start a new paragraph.

General Information

Type of Request: Design Exception☐ Design Waiver☐

Route and Design Classification:

Rural	☐	Local	☐
Suburban	☐	Collector	☐
Urban	☐	Arterial	☐

Traffic: Posted Speed: Speed mph
Design Speed: Speed mph
Current ADT: Enter ADT.
Design ADT: Enter ADT.
D: D %
K: K %
T: T %

Other traffic considerations: Provide description.

Work Classification

Work Type

- ○ New / Reconstruction
- ○ Spot Replacement
- ◉ Major Rehabilitation
- ○ Minor Rehabilitation
- ○ Structural Improvement
- ○ Preventive Maintenance

Applicable Design Guideline: Choose an item.

Provide supporting documentation/exhibits for the request. (Exhibits may include typical sections, geometric details, correspondence from other sections, agencies, etc.)

1. Design Exception/Design Waiver for the following element(s) of work. Mark all requested.

Controlling Criteria			
Design Speed *	☐	Clear Zone	☐
Lane Width *	☐	Cross Slope *	☐
Super elevation *	☐	Guardrail	☐
Shoulder Width *	☐	Vertical Clearance *	☐
Vertical Alignment *	☐	Bridge Width *	☐
Horizontal Alignment *	☐	Structural Capacity *	☐
Stopping Sight Distance *	☐	Horizontal Clearance	☐
Grade *	☐	Hydraulic Design Storm	☐
Median Width	☐		
Lateral Offset to Obstruction * (FHWA criteria only)			☐

* FHWA Controlling Design Criteria. An exception from FHWA is required. Note that FHWA only requires that the minimum values cited in the *Green Book* be met.

Other ☐

Explain: Provide explanation of other elements requested.

2. *Provide a synopsis of the scope of the project, the situation encountered and the problem to be mitigated.*
   Provide description.

3. *Describe the proposed design exception/waiver. Provide the proposed and standard values of the design exception/waiver element, citing City of Round Rock Transportation Criteria Manual, TxDOT Roadway Design Manual, AASHTO, TMUTCD or other criteria.*
   Provide description.

4. *Discuss the project's compatibility with adjacent roadway sections.*
   Provide description.

5. *Discuss alternatives to the exception that were considered.*
   Provide description.

6. *Provide a safety review of the project and as it relates to the proposed design exception/waiver. All Design Exceptions must have a Safety Review and Crash Analysis.*
   Provide description.

7. *Discuss the cost of the project (construction and right of way) and the cost differential between proposed design and a design that would meet guidelines.*
   Provide description.

8. *Discuss impacts other than costs of bringing the features up to standard (such as impacts to other design features, the natural and built environment, historical features, construction issues, social concerns, reduction of design life, etc.)*
   Provide description.

9. *Discuss proposed mitigation to address design exception feature, if applicable. Possible countermeasures may include advisory signs, lighting, guardrail, signing, rumble strips, future work to address design exception, incremental improvement, etc.*
   See link: FHWA - Mitigation Strategies for Design Exceptions
   Provide description.

Required Signatures

Prepared By:	Printed Name:
	Title:
Date:	Firm:

Approved By City of Round Rock Transportation Director:	Date:

9.6.C Design Checklists

Project Name/Number: _____

Type of Work: _____

Schematic Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Completed Checklist Must be Submitted with Plans

General

_____ City name & logo, Project name, roadway name and limits, Project length, Bridge length (if applicable) and Project description

_____ Design block including roadway classification, design speed, and traffic data, including current and design ADT, truck percent, directional distribution, and design DHV

_____ Vicinity map

_____ If applicable, the existing and proposed control of access lines

_____ Existing and proposed traffic volumes and, as applicable, turning movement volumes

_____ Direction of traffic flow on all roadways

_____ Geometrics of speed change and auxiliary lanes

_____ Governing specifications and date of adoption

Project Layout

_____ A suitable scale shall be utilized to clearly show project features, such as the beginning and end of the project, street names, baseline stations, horizontal alignment data, existing and proposed ROW, advance project warning signs, or any other pertinent information not shown elsewhere in the plan set.

_____ Scale shall not be smaller than 1 inch = 400 ft.

_____ The station and coordinates of the beginning and ending project points shall be labeled.

_____ The location of interchanges, mainlanes, grade separations, frontage roads, turnarounds, and ramps

_____ For freeways, the location and text of the proposed mainlane guide signs should be shown. Lane lines and/or arrows indicating the number of lanes should be shown

_____ Location of retaining walls and/or noise walls

Typical Sections

_____ Existing section shows the existing ROW, approximate lane and median widths, lane direction, shoulders, curbs, rail, border width, pavement structure and Station limits.

_____ Proposed sections illustrate the depths, dimensions, and station limits for every type of material in the proposed pavement structure.

_____ Proposed Typical Section including ROW, lane widths, lane direction, shoulders, curbs, rail, border width, Horizontal Control, Design Values, Minimum Design Values, Design Exception (if applicable), and Station limits for all roadways (main roadways, major and minor side streets, and ramps)

_____ Exclude bridge limits and ensure typical bridge section is included, if applicable

_____ Type and depth for all pavement layers including any subgrade preparation

_____ Show incidental roadway items such as curb and gutters, sidewalk, guardrail, underdrains, geotextile fabrics, barriers, etc.

_____ Control point for the Profile Grade Line (PGL)

_____ Project baseline and roadway centerline locations

_____ Cross slopes in percent (%) on roadway and shoulders; Side slopes as ratio (H:V) outside of shoulders.

_____ Include a typical section for each unique section of roadway.

Project Name/Number: _____

Type of Work: _____

Schematic Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Traffic Control

_____ Sequence of construction general notes

_____ Sequence of work outline for Traffic Control (showing basic concept of how to handle traffic during construction, including preliminary phasing)

_____ Preliminary Intersection Layouts

Roadway Plans

_____ North arrow, scale and legend

_____ Existing roadway features including: roadway alignments, edge of pavement and curb, medians, driveways, drainage structures, utilities, sidewalks, etc. Existing roadways and structures to be closed or removed.

_____ Boundaries (city, county, etc.), bodies of water (streams, lakes, rivers, etc.), street and roadway names.

_____ Alignment baseline stationing tick marks and labels every 100 ft, curve and point of intersection data, bearings, equations, and critical points stations such as PIs, PCs, PTs, etc.

_____ Intersection data (Stations, edge of pavement radius, etc.) of all proposed driveways and connecting roadways

_____ Begin & end project notation and Stations to cover all proposed work

_____ Existing and proposed ROW and permanent easement lines and widths at each break within project limits

_____ Proposed pavement (lane and shoulder) widths and cross slopes at all break points and transitions, lane direction arrow, prop. curb and sidewalks

_____ Indicate structure number, quantity, location, type, size of all proposed drainage structures

_____ Show location, type, and limits or lengths of proposed roadway elements with appropriate notation

_____ Ensure Minimum Design Values are met

_____ Show all work constrained to ROW and/or easements, including temporary construction easements and structure demolition limits

Roadway Profiles

_____ Stations along bottom at 50 ft intervals and datum elevations along the sides

_____ Profile grade line (PGL) and existing ground line with elevations at 50' to 2 decimal places

_____ Vertical alignment data (Grades in percent to 2 decimal places, VPI Station, elevation, curve length, K value, begin and end curve Station and elevation, etc.)

_____ Show all proposed drainage or other structures

_____ Show existing utilities

_____ Vertical Clearances (where applicable)

_____ Ensure Minimum K-values are met

Project Name/Number: _____

Type of Work: _____

Schematic Submission

Design and Construction Standards - Plan Checklist

Bridge Typical Sections

_____ Roadway width and cross slope, shoulder width and cross slope
_____ Type, location, and width of barriers or bridge railing
_____ Show sidewalks, curbs, medians, etc.
_____ Type, location, depth, and width of structural elements (deck, railing, beams, etc.)
_____ Show baseline location and applicable station ranges
_____ Show control point for Profile Grade Line (PGL)

Design Submittal Supplements

_____ Design Summary Form
_____ Design schedule – update
_____ Construction cost estimate
_____ Construction time determination estimate
_____ Geotechnical investigations report, if applicable
_____ Drainage report, if applicable

Notes or comments:

_____ _____
ENGINEER OF RECORD Date

Print Sign

Project Name/Number: _____

Type of Work: _____

30% Submission

Design and Construction Standards - Plan Checklist

Completed Checklist Must be Submitted with Plans

Title Sheet

_____ City name & logo, Project name, roadway name and limits, Project length, Bridge length (if applicable) and Project description

_____ Design block including roadway classification, design speed, and traffic data, including current and design ADT, truck percent, directional distribution, and design DHV

_____ Vicinity map

_____ Sheet index (sheet numbers and descriptions – if not separate sheet)

Project Layout

_____ A suitable scale shall be utilized to clearly depict and label existing and proposed project features.

_____ The station and coordinates of the beginning and ending project points shall be labeled.

Typical Sections

_____ Existing typical section showing the ROW, approximate lane and median widths, lane direction, shoulders, curbs, rail, border width, pavement structure and Station limits.

_____ Proposed Typical Section including ROW, lane widths, lane direction, shoulders, curbs, rail, border width, Horizontal Control, Design Values, Minimum Design Values, Design Exception (if applicable), and Station limits for all roadways (main roadways, major and minor side streets, and ramps)

_____ Proposed sections illustrate the depths, dimensions, and station limits for every type of material in the proposed pavement structure, including subgrade preparation.

_____ Exclude bridge limits and ensure typical bridge section is included, if applicable

_____ Type and depth for all pavement layers including any subgrade preparation

_____ Show incidental roadway items such as curb and gutters, sidewalk, guardrail, underdrains, geotextile fabrics, barriers, etc.

_____ Control point for the Profile Grade Line (PGL)

_____ Project baseline and roadway centerline locations

_____ Cross slopes in percent (%) on roadway and shoulders; Side slopes as ratio (H:V) outside of shoulders.

_____ Include a typical section for each unique section of roadway.

General Notes

_____ General design notes applicable to the project.

Survey Data

_____ Benchmark locations and numbers

_____ Control point coordinates, locations, elevations, and detailed descriptions

_____ Notation to vertical datum and the horizontal coordinate system

_____ Horizontal alignment and annotation (Stations, bearings, PC's, PT's, etc.)

Project Name/Number: _____

Type of Work: _____

30% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Quantity Sheets

_____ Preliminary Summary Sheets (Major Bid Items and Totals)

Traffic Control

_____ Sequence of construction general notes

_____ Sequence of work outline for Traffic Control (showing basic concept of how to handle traffic during construction, including preliminary phasing)

_____ Preliminary Intersection Layouts

Roadway Plans

_____ North arrow, scale and legend

_____ Show existing roadway features including: roadway alignments, edge of pavement and curb, medians, driveways, drainage structures, utilities, sidewalks, etc. Existing roadways and structures to be closed or removed.

_____ Boundaries (city, county, etc.), bodies of water (streams, lakes, rivers, etc.), street and roadway names

_____ Alignment baseline stationing tick marks and labels every 100 ft., curve and point of intersection data, bearings, equations, and critical points stations such as PIs, PCs, PTs, etc.

_____ Intersection data (Stations, edge of pavement radius, etc.) of all proposed driveways and connecting roadways

_____ Begin & end project notation and Stations to cover all proposed work

_____ Existing and proposed ROW and permanent easement lines and widths at each break within project limits

_____ Proposed pavement (lane and shoulder) widths and cross slopes at all break points and transitions, lane direction arrow, prop. curb and sidewalks

_____ Indicate structure number, quantity, location, type, size of all proposed drainage structures

_____ Show location, type, and limits or lengths of proposed roadway elements with appropriate notation

_____ Ensure Minimum Design Values are met

_____ Show all work constrained to ROW and/or easements, including temporary construction easements and structure demolition limits

Roadway Profile

_____ Stations along bottom at 50 ft. intervals and datum elevations along the sides

_____ Profile grade line (PGL) and existing ground line with elevations at 50' to 2 decimal places

_____ Vertical alignment data (Grades in percent to 2 decimal places, VPI Station, elevation, curve length, K value, begin and end curve Station and elevation, etc.)

_____ Show all proposed drainage or other structures

_____ Show existing utilities

_____ Vertical Clearances (where applicable)

_____ Ensure Minimum K-values are met

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

30% Submission

Design and Construction Standards - Plan Checklist

Culvert Layouts

_____ Plan and profile view for bridge class culverts or cross section for regular culverts

_____ Plan view – north arrow, begin & end of structure Stations and elevations, structure & roadway baselines with skew angle, traffic flow direction, etc.

_____ Roadway cross section along culvert centerline

_____ Existing & proposed grade lines, ROW lines and width, easements, etc.

_____ Roadway baseline, skew angle, and flow direction

_____ Structure slope & flow line elevations, upstream and downstream soil slopes, and structure dimensions from baseline

_____ Length, size, type, skew, and slope of structure

_____ End treatment size, type, and dimensions

Drainage Plan and Profile

_____ Show legend for plan and profile elements

_____ Plan – north arrow, baseline stations, ROW

_____ Plan – show drainage area boundaries

_____ Plan – show drainage structures (number, type, length, layout, station, offset, etc.), links (number, type, length, flow direction, etc.), and outlet pipes (number, flow direction, etc.)

_____ Profile – show drainage structures (number, layout, type, control elevations), links (layout, size, type, length, design flow, flow capacity, etc.), and hydraulic grade line (HGL)

_____ Profile – show natural ground and PGL

Utilities

_____ Include utility layout sheets showing latest information for existing utilities

Retaining Walls

_____ Preliminary retaining wall layouts showing limits, ranges in height, and type of wall

_____ Orientation: place walls on the plan sheet such that the elevation is looking at the "Front face" of the retaining wall. Rotate the plan view to correspond with the elevation. Show appropriate roadway stationing and north arrow

_____ Plot the soil core boring locations

_____ Show ROW where applicable

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

30% Submission

Design and Construction Standards - Plan Checklist

Bridge Layout – Plan View

_____ Baselines with stations, bearings, alignment data, and north arrow

_____ Pavement width (roadway & shoulders), and traffic flow or stream flow

_____ Cross slope and superelevation data

_____ Begin and end structure stations

_____ ROW & easement lines

_____ Bent stations and bearings

_____ Skew angle of structure and bents

_____ Existing contours

_____ Railing type, location, and limits

_____ Limits & slope of riprap or erosion control treatment

Bridge Layout – Profile View

_____ Provide national bridge inventory (NBI) number, if applicable

_____ Type, length, and size of units or spans

_____ Overall length, payment limits, railing type & post spacing

_____ Existing & proposed ground lines with elevations

_____ Existing & proposed water surface elevations for design year storm if applicable

_____ Vertical curve data and grades

_____ Begin and end structure stations and elevations

_____ Bent numbers & fixed/ expansion conditions at all bents

_____ Column heights and type, length, size, and number of foundation elements

_____ Limits & slope of riprap or erosion control treatment

Bridge Typical Sections

_____ Roadway width and cross slope, shoulder width and cross slope

_____ Type, location, and width of barriers or bridge railing

_____ Show sidewalks, curbs, medians, etc.

_____ Type, location, depth, and width of structural elements (deck, railing, beams, etc.)

_____ Show baseline location and applicable station ranges

_____ Show control point for Profile Grade Line (PGL)

Project Name/Number: _____

Type of Work: _____

30% Submission

Design and Construction Standards - Plan Checklist

Design Submittal Supplements

_____ Design Summary Report (DSR)

_____ Design schedule - update

_____ Initial construction cost estimate

_____ Initial construction time determination

_____ Special Provision form for right-of-way acquisition

_____ Special Provision form for utility relocations

_____ Special Provision form for environmental clearance

_____ Geotechnical investigations report

_____ Drainage report, if applicable

_____ Database of property owner information and executed Right-of-Entry forms

_____ Submittal package in pdf format

Notes and comments:

_____ _____

ENGINEER OF RECORD Date

Print Sign

Project Name/Number: _____

Type of Work: _____

60% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Completed Checklist Must be Submitted with Plans

Title Sheet

_____ City name & logo, Project name, roadway name and limits, Project length, Bridge length (if applicable) and Project description

_____ Design block including roadway classification, design speed, and traffic data, including current and design ADT, truck percent, directional distribution, and design DHV

_____ Project length (roadway length, bridge length, and total length) in feet to 2 decimal places and in miles to 3 decimal places

_____ Vicinity map (north arrow, project location, project limits, equations, exceptions to project length, city and county names, highway designation, road and street names, and name and description of adjoining projects

_____ Key map (City map and Project location)

_____ Signature blocks (provisions for signatures of officials approving the plans – Design Engineer, City of Round Rock officials)

_____ Miscellaneous (watershed names, area of disturbed soil in acres, and design exceptions)

_____ Copyright statement

_____ Applicable Standard Specifications

_____ Complete sheet index (sheet numbers & descriptions with no number overlaps or gaps)

Project Layout

_____ A suitable scale shall be utilized to clearly depict and label existing and proposed project features.

_____ The station and coordinates of the beginning and ending project points shall be labeled.

_____ Project control point locations with coordinates, station/ offsets, and descriptions

_____ Horizontal alignment with annotation of all entities (bearings, PC's, PT's, etc.)

_____ Horizontal and vertical control data or reference

Typical Sections

_____ Existing typical section showing the ROW, approximate lane and median widths, lane direction, shoulders, curbs, rail, border width, pavement structure and Station limits.

_____ Proposed Typical Section including ROW, lane widths, lane direction, shoulders, curbs, rail, border width, Horizontal Control, Design Values, Minimum Design Values, Design Exception (if applicable), and Station limits for all roadways (main roadways, major and minor side streets, and ramps)

_____ Proposed sections illustrate the depths, dimensions, and station limits for every type of material in the proposed pavement structure, including subgrade preparation.

_____ Exclude bridge limits and ensure typical bridge section is included, if applicable

_____ Type and depth for all pavement layers including any subgrade preparation

Project Name/Number: _____

Type of Work: _____

60% Submission

Design and Construction Standards - Plan Checklist

Typical Sections (Cont.)

_____ Show incidental roadway items such as curb and gutters, sidewalk, guardrail, underdrains, geotextile fabrics, barriers, etc.

_____ Control point for the Profile Grade Line (PGL)

_____ Project baseline and roadway centerline locations

_____ Cross slopes in percent (%) on roadway and shoulders; Side slopes as ratio (H:V) outside of shoulders.

_____ Include a typical section for each unique section of roadway.

_____ Proposed sections for commercial and residential driveways

_____ Quantity rates and basis of estimate notes as necessary

_____ Topsoil and seeding widths, if applicable

_____ Superelevation pivot point location

_____ All transitions with Station limits

_____ Limits of material to be disposed or salvaged

_____ Approximate location and depth of main utilities with appropriate notes

_____ Typical sections for temporary construction if not included in TCP plans

General Notes

_____ General design notes applicable to the project. See list of General Notes to be provided by the City of Round Rock

_____ Applicable notes for construction, traffic control, drainage, excavation, grading, embankment, utility relocation, right-of-way, tree protection, rigid & flexible pavement, roadway incidentals, signals, lighting, pavement markings, signs, etc.

Survey Data

_____ Benchmark locations and numbers

_____ Control point coordinates, locations, elevations, and detailed descriptions

_____ Notation to vertical datum and the horizontal coordinate system

_____ Horizontal alignment and annotation (Stations, bearings, PC's, PT's, etc.)

Quantity Sheets

_____ Preliminary Summary Sheets (Major Bid Items and Totals)

_____ All pay items are included on the summary sheet(s)

_____ Item descriptions agree with standard agency item descriptions and units

_____ All items have item code number, description, unit, quantities, and total

_____ Items for bid alternates

_____ Different summary tables for different project elements (roadway, drainage, etc.)

_____ Special notes or remarks

_____ All quantities per plan sheet (drainage & driveway items per structure & each)

_____ Acceptable culvert pipes & pipe type, class and thickness

Project Name/Number: _____

Type of Work: _____

60% Submission

Design and Construction Standards - Plan Checklist

Traffic Control / Construction Sequence

_____ Sequence of construction general notes

_____ Sequence of work outline for Traffic Control (showing basic concept of how to handle traffic during construction, including preliminary phasing)

_____ Preliminary Intersection Layouts

_____ Traffic control plans, typical sections, and narrative for each construction phase

_____ Plans show proposed phase work, construction zones, temporary signs with standard numbers, temporary markings & markers with standard numbers, barricades, detours, traffic flow direction, location and dimension of all temporary traffic items, legend, scale, and seal or preliminary stamp

_____ Typical sections showing phase number and stations ranges, proposed and constructed work with dimensions for each phase, lane widths and flow direction of all traffic lanes, applicable channelizing devices between traffic lanes and construction zone, clear zones, baselines, and slopes of temporary and permanent graded and paved segments

_____ Narrative includes necessary steps for construction, traffic pattern changes, and day & time restrictions for lane reductions, roadway closures, or general work

_____ Apply appropriate plan legend and hatching to distinguish proposed work from constructed elements

_____ Verify all pavement drop-offs have proper treatment

_____ Verify all temporary barriers have proper end treatment

_____ Check for necessary speed reductions and apply signage accordingly

_____ Verify that all aspects of the whole project and its phases are constructible based on the information provided in the traffic control sheets

_____ Show or reference typical & modified traffic control application diagrams in accordance with TMUTCD and TxDOT Standards

Roadway Plans

_____ North arrow, scale and legend

_____ Show existing roadway features including: roadway alignments, edge of pavement and curb, medians, driveways, drainage structures, utilities, sidewalks, etc. Existing roadways and structures to be closed or removed.

_____ Boundaries (city, county, etc.), bodies of water (streams, lakes, rivers, etc.), street and roadway names

_____ Alignment baseline stationing tick marks and labels every 100 ft, curve and point of intersection data, bearings, equations, and critical points stations such as PIs, PCs, PTs, etc.

_____ Intersection data (Stations, edge of pavement radius, etc.) of all proposed driveways and connecting roadways

_____ Begin & end project notation and Stations to cover all proposed work

_____ Existing and proposed ROW and permanent easement lines and widths at each break within project limits

_____ Proposed pavement (lane and shoulder) widths and cross slopes at all break points and transitions, lane direction arrow, prop. curb and sidewalks

Project Name/Number: _____

Type of Work: _____

60% Submission

Design and Construction Standards - Plan Checklist

Roadway Plans (cont.)

_____ Indicate structure number, quantity, location, type, size of all proposed drainage structures

_____ Show location, type, and limits or lengths of proposed roadway elements with appropriate notation

_____ Ensure Minimum Design Values are met

_____ Show all work constrained to ROW and/or easements, including temporary construction easements and structure demolition limits

_____ Access control lines, notes, and limits

_____ Temporary construction or slope easements lines showing widths and limits

_____ Property lines and ownership data

_____ Superelevation, normal crown, and transition locations and limits

_____ Notation for structure removal, structure repair, or proposed structure (location, begin and end stations, type, dimensions, etc.) including bridges, retaining walls, sound walls, and sign bridges

_____ Location of borings or test pits for subsurface investigations

_____ Show erosion control items (location, type, limits, etc.) with labels, if separate plans are not provided

_____ Limits for ROW clearing, unsuitable material, pavement removal, etc.

Roadway Profile

_____ Stations along bottom at 50 ft. intervals and datum elevations along the sides

_____ Profile grade line (PGL) and existing ground line with elevations at 50' to 2 decimal places

_____ Vertical alignment data (Grades in percent to 2 decimal places, VPI Station, elevation, curve length, K value, begin and end curve Station and elevation, etc.)

_____ Show all proposed drainage or other structures

_____ Show existing utilities

_____ Vertical Clearances (where applicable)

_____ Ensure Minimum K-values are met

_____ Show left and right ditch flow lines if not shown on Drainage P&P sheets

_____ Clearances for railroads, roads, streambeds, and between structures and/or utilities

_____ Show profiles for connecting roadways and driveways

_____ Show limits of proposed and existing grades

_____ Show begin and end Stations for proposed structures

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

60% Submission

Design and Construction Standards - Plan Checklist

Drainage Area Map

_____ Watershed area, limits, and directional flow arrows

_____ Tributaries, highways, etc.

_____ County and city boundaries

_____ North arrow & project location

_____ Peak discharge computation method and flow values for 25 & 100 year storm events

Hydraulic Data

_____ Peak discharge computation method and flow values for all design year storm events

_____ For bridges, show bridge cross section summary table (velocity, water surface elevation, energy grade line, flow area, and top width for the natural, existing, and proposed conditions for the design and 100-year flows at the various sections along the reach being modeled)

_____ For bridges, show bridge summary table (existing, proposed, and difference of water surface elevations for the design and 100-year storm events)

_____ For bridges, show typical stream cross section at the bridge location with proposed road profile

_____ For culverts, show input and output culvert hydraulic parameters

_____ For storm sewers, show input and output parameters for storm sewers

_____ For ditches, show input and output for open channel flow analysis data

Culvert Layouts

_____ Plan and profile view for bridge class culverts or cross section for regular culverts

_____ Plan view – north arrow, begin & end of structure Stations and elevations, structure & roadway baselines with skew angle, traffic flow direction, etc.

_____ Roadway cross section along culvert centerline

_____ Existing & proposed grade lines, ROW lines and width, easements, etc.

_____ Roadway baseline, skew angle, and flow direction

_____ Structure slope & flow line elevations, upstream and downstream soil slopes, and structure dimensions from baseline

_____ Length, size, type, skew, and slope of structure

_____ End treatment size, type, and dimensions

_____ Show roadway elements (pavement depth & width, barriers, guardrail, slope treatment, etc.)

_____ Description of existing and proposed structure elements with proper labels for agency standards

_____ Erosion control treatment type, size, and depth

_____ Peak discharge, velocity, and upstream and downstream WSE of design storm

_____ Utilities and clearances to proposed elements

_____ Limits of trench excavation protection

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

60% Submission

Design and Construction Standards - Plan Checklist

Drainage Plan and Profile

_____ Show legend for plan and profile elements

_____ Plan – north arrow, baseline stations, ROW

_____ Plan – show drainage area boundaries

_____ Plan – show drainage structures (number, type, length, layout, station, offset, etc.), links (number, type, length, flow direction, etc.), and outlet pipes (number, flow direction, etc.)

_____ Profile – show drainage structures (number, layout, type, control elevations), links (layout, size, type, length, design flow, flow capacity, etc.), and hydraulic grade line (HGL)

_____ Profile – show natural ground and PGL

_____ Plan – show ditch and channel alignments

_____ Profile – show flow lines for ditches and channels

_____ Reference to other roadway or drainage plans

Utilities

_____ Include utility layout sheets showing latest information for existing utilities

Retaining Walls

_____ Preliminary retaining wall layouts showing limits, ranges in height, and type of wall

_____ Orientation: place walls on the plan sheet such that the elevation is looking at the "Front face" of the retaining wall. Rotate the plan view to correspond with the elevation. Show appropriate roadway stationing and north arrow

_____ Plot the soil core boring locations

_____ Show ROW where applicable

_____ If flume or mowing strip is used, show limits if they vary from the wall limits.

_____ Present horizontal curve data

_____ When underdrains are used, show flowline elevations and outfall locations & elevations

_____ Groundwater levels for walls in cut sections

Bridge Layout – Plan View

_____ Baselines with stations, bearings, alignment data, and north arrow

_____ Pavement width (roadway & shoulders), and traffic flow or stream flow

_____ Cross slope and superelevation data

_____ Begin and end structure stations

_____ ROW & easement lines

_____ Bent stations and bearings

_____ Skew angle of structure and bents

Bridge Layout – Plan View (cont.)

_____ Limits & slope of riprap or erosion control treatment

_____ Existing contours

_____ Railing type, location, and limits

Bridge Layout – Profile View

_____ Provide national bridge inventory (NBI) number, if applicable

_____ Type, length, and size of units or spans

_____ Overall length, payment limits, railing type & post spacing

_____ Existing & proposed ground lines with elevations

_____ Existing & proposed water surface elevations for design year storm if applicable

_____ Vertical curve data and grades

_____ Begin and end structure stations and elevations

_____ Bent numbers & fixed/ expansion conditions at all bents

_____ Column heights and type, length, size, and number of foundation elements

_____ Limits & slope of riprap or erosion control treatment

Bridge Typical Sections

_____ Roadway width and cross slope, shoulder width and cross slope

_____ Type, location, and width of barriers or bridge railing

_____ Show sidewalks, curbs, medians, etc.

_____ Type, location, depth, and width of structural elements (deck, railing, beams, etc.)

_____ Show baseline location and applicable station ranges

_____ Show control point for Profile Grade Line (PGL)

Project Name/Number: _____

Type of Work: _____

60% Submission

Design and Construction Standards - Plan Checklist

Design Submittal Supplements

_____ Design Summary Report (DSR)

_____ Design schedule - update

_____ Initial construction cost estimate

_____ Initial construction time determination

_____ Special Provision form for right-of-way acquisition

_____ Special Provision form for utility relocations

_____ Special Provision form for environmental clearance

_____ Geotechnical investigations report

_____ Drainage report, if applicable

_____ Database of property owner information and executed Right-of-Entry forms

_____ Submittal package in pdf format

Notes and comments:

_____ _____

ENGINEER OF RECORD Date

Print Sign

Project Name/Number: _____

Type of Work: _____

90% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Completed Checklist Must be Submitted with Plans

Title Sheet

_____ City name & logo, Project name, roadway name and limits, Project length, Bridge length (if applicable) and Project description

_____ Design block including roadway classification, design speed, and traffic data, including current and design ADT, truck percent, directional distribution, and design DHV

_____ Project length (roadway length, bridge length, and total length) in feet to 2 decimal places and in miles to 3 decimal places

_____ Vicinity map (north arrow, project location, project limits, equations, exceptions to project length, city and county names, highway designation, road and street names, and name and description of adjoining projects

_____ Key map (City map and Project location)

_____ Signature blocks (provisions for signatures of officials approving the plans – Design Engineer, City of Round Rock officials)

_____ Miscellaneous (watershed names, area of disturbed soil in acres, and design exceptions)

_____ Copyright statement

_____ Applicable Standard Specifications

_____ Complete sheet index (sheet numbers & descriptions with no number overlaps or gaps)

Project Layout

_____ A suitable scale shall be utilized to clearly depict and label existing and proposed project features.

_____ The station and coordinates of the beginning and ending project points shall be labeled.

_____ Project control point locations with coordinates, station/ offsets, and descriptions

_____ Horizontal alignment with annotation of all entities (bearings, PC's, PT's, etc.)

_____ Horizontal and vertical control data or reference

Typical Sections

_____ Existing typical section showing the ROW, approximate lane and median widths, lane direction, shoulders, curbs, rail, border width, pavement structure and Station limits.

_____ Proposed Typical Section including ROW, lane widths, lane direction, shoulders, curbs, rail, border width, Horizontal Control, Design Values, Minimum Design Values, Design Exception (if applicable), and Station limits for all roadways (main roadways, major and minor side streets, and ramps)

_____ Proposed sections illustrate the depths, dimensions, and station limits for every type of material in the proposed pavement structure, including subgrade preparation.

_____ Exclude bridge limits and ensure typical bridge section is included, if applicable

_____ Type and depth for all pavement layers including any subgrade preparation

_____ Show incidental roadway items such as curb and gutters, sidewalk, guardrail, underdrains, geotextile fabrics, barriers, etc.

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Typical Sections (cont.)

_____ Control point for the Profile Grade Line (PGL)

_____ Project baseline and roadway centerline locations

_____ Cross slopes in percent (%) on roadway and shoulders; Side slopes as ratio (H:V) outside of shoulders.

_____ Include a typical section for each unique section of roadway.

_____ Proposed sections for commercial and residential driveways

_____ Quantity rates and basis of estimate notes as necessary

_____ Topsoil and seeding widths, if applicable

_____ Superelevation pivot point location

_____ All transitions with Station limits

_____ Limits of material to be disposed or salvaged

_____ Approximate location and depth of main utilities with appropriate notes

_____ Typical sections for temporary construction if not included in TCP plans

General Notes

_____ General design notes applicable to the project. See list of General Notes to be provided by City of Round Rock

_____ Applicable notes for construction, traffic control, drainage, excavation, grading, embankment, utility relocation, right-of-way, tree protection, rigid & flexible pavement, roadway incidentals, signals, lighting, pavement markings, signs, etc.

_____ Basis of estimate

Survey Data

_____ Benchmark locations and numbers

_____ Control point coordinates, locations, elevations, and detailed descriptions

_____ Notation to vertical datum and the horizontal coordinate system

_____ Horizontal alignment and annotation (Stations, bearings, PC's, PT's, etc.)

Quantity Sheets

_____ Preliminary Summary Sheets (Bid Items and Totals)

_____ All pay items are included on the summary sheet(s)

_____ Item descriptions agree with standard agency item descriptions and units

_____ All items have item code number, description, unit, quantities, and total

_____ Items for bid alternates

_____ Different summary tables for different project elements (roadway, drainage, etc.)

_____ Special notes or remarks

_____ All quantities per plan sheet (drainage & driveway items per structure & each)

_____ Acceptable culvert pipes & pipe type, class and thickness

Project Name/Number: _____

Type of Work: _____

90% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Traffic Control / Construction Sequence

_____ Sequence of construction general notes

_____ Sequence of work outline for Traffic Control (showing basic concept of how to handle traffic during construction, including preliminary phasing)

_____ Preliminary Intersection Layouts

_____ Traffic control plans, typical sections, and narrative for each construction phase

_____ Plans show proposed phase work, construction zones, temporary signs with standard numbers, temporary markings & markers with standard numbers, barricades, detours, traffic flow direction, location and dimension of all temporary traffic items, legend, scale, and seal or preliminary stamp

_____ Typical sections showing phase number and stations ranges, proposed and constructed work with dimensions for each phase, lane widths and flow direction of all traffic lanes, applicable channelizing devices between traffic lanes and construction zone, clear zones, baselines, and slopes of temporary and permanent graded and paved segments

_____ Narrative includes necessary steps for construction, traffic pattern changes, and day & time restrictions for lane reductions, roadway closures, or general work

_____ Apply appropriate plan legend and hatching to distinguish proposed work from constructed elements

_____ Verify all pavement drop-offs have proper treatment

_____ Verify all temporary barriers have proper end treatment

_____ Check for necessary speed reductions and apply signage accordingly

_____ Verify that all aspects of the whole project and its phases are constructible based on the information provided in the traffic control sheets

_____ Show or reference typical & modified traffic control application diagrams in accordance with TMUTCD and TxDOT Standards

Roadway Plans

_____ North arrow, scale and legend

_____ Show existing roadway features including: roadway alignments, edge of pavement and curb, medians, driveways, drainage structures, utilities, sidewalks, etc. Existing roadways and structures to be closed or removed.

_____ Boundaries (city, county, etc.), bodies of water (streams, lakes, rivers, etc.), street and roadway names

_____ Alignment baseline stationing tick marks and labels every 100 ft, curve and point of intersection data, bearings, equations, and critical points stations such as PIs, PCs, PTs, etc.

_____ Intersection data (Stations, edge of pavement radius, etc.) of all proposed driveways and connecting roadways

_____ Begin & end project notation and Stations to cover all proposed work

_____ Existing and proposed ROW and permanent easement lines and widths at each break within project limits

_____ Proposed pavement (lane and shoulder) widths and cross slopes at all break points and transitions, lane direction arrow, prop. curb and sidewalks

Project Name/Number: _____

Type of Work: _____

90% Submission

Design and Construction Standards - Plan Checklist

Roadway Plans (cont.)

_____ Indicate structure number, quantity, location, type, size of all proposed drainage structures

_____ Location, type, and limits or lengths of proposed roadway elements with appropriate notation

_____ Ensure Minimum Design Values are met

_____ Show all work constrained to ROW and/or easements, including temporary construction easements and structure demolition limits

_____ Access control lines, notes, and limits

_____ Temporary construction or slope easements lines showing widths and limits

_____ Property lines and ownership data

_____ Superelevation, normal crown, and transition locations and limits

_____ Notation for structure removal, structure repair, or proposed structure (location, begin and end stations, type, dimensions, etc.) including bridges, retaining walls, sound walls, and sign bridges

_____ Location of borings or test pits for subsurface investigations

_____ Erosion control items (location, type, limits, etc.) with labels, if separate plans are not provided

_____ Limits for ROW clearing, unsuitable material, pavement removal, etc.

Roadway Profile

_____ Stations along the bottom at 50 ft. intervals and datum elevations along the sides

_____ Profile grade line (PGL) and existing ground line with elevations at 50' to 2 decimal places

_____ Vertical alignment data (Grades in percent to 2 decimal places, VPI Station, elevation, curve length, K value, begin and end curve Station and elevation, etc.)

_____ All proposed drainage or other structures

_____ Existing utilities

_____ Vertical Clearances (where applicable)

_____ Ensure Minimum K-values are met

_____ Left and right ditch flow lines if not shown on Drainage P&P sheets

_____ Clearances for railroads, roads, streambeds, and between structures and/or utilities

_____ Profiles for connecting roadways and driveways

_____ Limits of proposed and existing grades

_____ Beginning and end Stations for proposed structures

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

90% Submission

Design and Construction Standards - Plan Checklist

Drainage Area Map

_____ Watershed area, limits, and directional flow arrows

_____ Tributaries, highways, etc.

_____ County and city boundaries

_____ North arrow & project location

_____ Peak discharge computation method and flow values for 25 & 100 year storm events

Hydraulic Data

_____ Peak discharge computation method and flow values for all design year storm events

_____ For bridges, show bridge cross section summary table (velocity, water surface elevation, energy grade line, flow area, and top width for the natural, existing, and proposed conditions for the design and 100-year flows at the various sections along the reach being modeled)

_____ For bridges, show bridge summary table (existing, proposed, and difference of water surface elevations for the design and 100-year storm events)

_____ For bridges, show typical stream cross section at the bridge location with proposed road profile

_____ For culverts, show input and output culvert hydraulic parameters

_____ For storm sewers, show input and output parameters for storm sewers

_____ For ditches, show input and output for open channel flow analysis data

Culvert Layouts

_____ Plan and profile view for bridge class culverts or cross section for regular culverts

_____ Plan view – north arrow, begin & end of structure Stations and elevations, structure & roadway baselines with skew angle, traffic flow direction, etc.

_____ Roadway cross section along culvert centerline

_____ Existing & proposed grade lines, ROW lines and width, easements, etc.

_____ Roadway baseline, skew angle, and flow direction

_____ Structure slope & flow line elevations, upstream and downstream soil slopes, and structure dimensions from baseline

_____ Length, size, type, skew, and slope of structure

_____ End treatment size, type, and dimensions

_____ Roadway elements (pavement depth & width, barriers, guardrail, slope treatment, etc.)

_____ Description of existing and proposed structure elements with proper labels for agency standards

_____ Erosion control treatment type, size, and depth

_____ Peak discharge, velocity, and upstream and downstream WSE of design storm

_____ Utilities and clearances to proposed elements

_____ Limits of trench excavation protection

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

90% Submission

Design and Construction Standards - Plan Checklist

Drainage Plan and Profile

_____ Show legend for plan and profile elements

_____ Plan – north arrow, baseline stations, ROW

_____ Plan – show drainage area boundaries

_____ Plan – show drainage structures (number, type, length, layout, station, offset, etc.), links (number, type, length, flow direction, etc.), and outlet pipes (number, flow direction, etc.)

_____ Profile – show drainage structures (number, layout, type, control elevations), links (layout, size, type, length, design flow, flow capacity, etc.), and hydraulic grade line (HGL)

_____ Profile – show natural ground and PGL

_____ Plan – show ditch and channel alignments

_____ Profile – show flow lines for ditches and channels

_____ Reference to other roadway or drainage plans

Utilities

_____ Include utility layout sheets showing latest information for existing utilities

_____ Include proper notation and reference to other utility drawings, if applicable

Retaining Walls

_____ Preliminary retaining wall layouts showing limits, ranges in height, and type of wall

_____ Final retaining wall layouts showing typical sections, geometry data, and detail sheets

_____ For bridges show bridge layouts (plan and profile), typical sections, foundation data, and detail sheets

Bridge Layout – Plan View

_____ Baselines with stations, bearings, alignment data, and north arrow

_____ Pavement width (roadway & shoulders), and traffic flow or stream flow

_____ Cross slope and superelevation data

_____ Begin and end structure stations

_____ ROW & easement lines

_____ Bent stations and bearings

_____ Skew angle of structure and bents

_____ Existing contours

_____ Railing type, location, and limits

_____ Limits & slope of riprap or erosion control treatment

_____ Armor joint type, location, and seal size

_____ Approach slab and curb returns

Bridge Layout – Plan View (cont.)

_____ Location of test holes

_____ Horizontal clearances (structure, utilities, railroad, etc.)

_____ Bridge Protection Assembly

_____ Type and limits of riprap (and blockouts, if required)

_____ Locate bridge drain and/or lighting brackets stations, when applicable.

_____ Show existing structure (dashed) on plan view, with existing National Bridge Inventory (NBI) number

_____ For staged (or phased) construction, show dimension to staged construction joints

_____ For widenings, show existing structure, existing NBI number, overall and roadway widths of existing and new structures

Bridge Layout – Profile View

_____ Provide national bridge inventory (NBI) number, if applicable

_____ Type, length, and size of units or spans

_____ Overall length, payment limits, railing type & post spacing

_____ Existing & proposed ground lines with elevations

_____ Existing & proposed water surface elevations for design year storm if applicable

_____ Vertical curve data and grades

_____ Begin and end structure stations and elevations

_____ Bent numbers & fixed/ expansion conditions at all bents

_____ Column heights and type, length, size, and number of foundation elements

_____ Limits & slope of riprap or erosion control treatment

_____ Minimum clearances to proposed and existing elements

_____ Test holes, data, and information

_____ Identify all traffic elements (detectors, conduits, etc.) in structure elements

Bridge Typical Sections

_____ Roadway width and cross slope, shoulder width and cross slope

_____ Type, location, and width of barriers or bridge railing

_____ Show sidewalks, curbs, medians, etc.

_____ Type, location, depth, and width of structural elements (deck, railing, beams, etc.)

_____ Show baseline location and applicable station ranges

_____ Show control point for Profile Grade Line (PGL)

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

90% Submission

Design and Construction Standards - Plan Checklist

Traffic Signals & Illumination

_____ Signals – signal layouts, signal elevation, signal wiring, and signal phasing

_____ Signals - show proposed and existing signal elements (pole, mast arm, signal heads, conduits, detectors, traffic boxes, etc.)

_____ Show all applicable TMS elements (cameras, changeable message signs, vehicle detection, etc.)

_____ Illumination – show layouts that include lighting poles, mounted luminaire, lighting details, electric service, etc.

Signing & Pavement Markings

_____ North arrow, street names, legend, pavement lines and traffic lanes, shoulders, alignment with stations, ROW, etc.

_____ Show existing elements to be removed, relocated, re-striped, or to remain in place

_____ Show proposed elements (markings, markers, signs, delineators, etc.)

_____ Show begin and end stations for proposed striping

_____ Standard number, size, type, color, and dimensions of proposed elements

_____ Spacing and width of lane lines

_____ Spacing and width of markings lines for crosshatched areas

_____ Show permanent elements only, temporary items should be shown on TCP

_____ Label elements according to legend or reference other drawings as appropriate

Erosion Control

_____ Include a narrative (site description, list of applicable soil stabilization and other erosion control devices, offsite requirements, general notes, and special requirements)

_____ Show north arrow, street names, legend, pavement lines and traffic lanes, shoulders, alignment with stations, ROW, etc. on plans

_____ Show ROW, proposed pavement lines, and all drainage structures

_____ Show existing topo features and existing contours

_____ Show and label temporary & permanent erosion control devices and measures

_____ Include legend as appropriate (silt fence, rock filter dam, construction exit, etc.)

Cross Sections

_____ Cut sections at 50' intervals and place 2 to 3 sections per sheet

_____ Show existing ground and proposed segments with appropriate labels

_____ Show roadway name, left and right grid distances, and datum elevations

_____ Show cross section station and PGL elevation

_____ Show width and slope (% or ratio) of all proposed segments

_____ Show elevations at break points (shoulders, ditch flow line, catch point, etc.)

Cross Sections (Cont.)

_____

_____ Show dimensions from baseline to ROW

_____ Show retaining walls, railing, barrier, and guardrail as necessary

_____ Indicate begin and end project station

Design Submittal Supplements

_____ Design Summary Report (DSR)

_____ Design schedule - update

_____ Initial construction cost estimate

_____ Initial construction time determination

_____ Special Provision form for right-of-way acquisition

_____ Special Provision form for utility relocations

_____ Special Provision form for environmental clearance

_____ Geotechnical investigations report

_____ Drainage report, if applicable

_____ Database of property owner information and executed Right-of-Entry forms

_____ Submittal package in pdf format

_____ Electronic (CAD) design files for earthwork calculations, .zip file

Notes and comments:

_____ _____

ENGINEER OF RECORD Date

Print Sign

Project Name/Number: _____

Type of Work: _____

100% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Completed Checklist Must be Submitted with Plans

Title Sheet

_____ City name & logo, Project name, roadway name and limits, Project length, Bridge length (if applicable) and Project description

_____ Design block including roadway classification, design speed, and traffic data, including current and design ADT, truck percent, directional distribution, and design DHV

_____ Project length (roadway length, bridge length, and total length) in feet to 2 decimal places and in miles to 3 decimal places

_____ Vicinity map (north arrow, project location, project limits, equations, exceptions to project length, city and county names, highway designation, road and street names, and name and description of adjoining projects

_____ Key map (City map and Project location)

_____ Signature blocks (provisions for signatures of officials approving the plans – Design Engineer, City of Round Rock officials)

_____ Miscellaneous (watershed names, area of disturbed soil in acres, and design exceptions)

_____ Copyright statement

_____ Applicable Standard Specifications

_____ Complete sheet index (sheet numbers & descriptions with no number overlaps or gaps)

Project Layout

_____ A suitable scale shall be utilized to clearly depict and label existing and proposed project features.

_____ The station and coordinates of the beginning and ending project points shall be labeled.

_____ Project control point locations with coordinates, station/ offsets, and descriptions

_____ Horizontal alignment with annotation of all entities (bearings, PC's, PT's, etc.)

_____ Horizontal and vertical control data or reference

Typical Sections

_____ Existing typical section showing the ROW, approximate lane and median widths, lane direction, shoulders, curbs, rail, border width, pavement structure and Station limits.

_____ Proposed Typical Section including ROW, lane widths, lane direction, shoulders, curbs, rail, border width, Horizontal Control, Design Values, Minimum Design Values, Design Exception (if applicable), and Station limits for all roadways (main roadways, major and minor side streets, and ramps)

_____ Proposed sections illustrate the depths, dimensions, and station limits for every type of material in the proposed pavement structure, including subgrade preparation.

_____ Exclude bridge limits and ensure typical bridge section is included, if applicable

_____ Type and depth for all pavement layers including any subgrade preparation

_____ Show incidental roadway items such as curb and gutters, sidewalk, guardrail, underdrains, geotextile fabrics, barriers, etc.

Design and Construction Standards - Plan Checklist

Typical Sections (cont.)

_____ Control point for the Profile Grade Line (PGL)

_____ Project baseline and roadway centerline locations

_____ Cross slopes in percent (%) on roadway and shoulders; Side slopes as ratio (H:V) outside of shoulders.

_____ Include a typical section for each unique section of roadway.

_____ Proposed sections for commercial and residential driveways

_____ Quantity rates and basis of estimate notes as necessary

_____ Topsoil and seeding widths, if applicable

_____ Superelevation pivot point location

_____ All transitions with Station limits

_____ Limits of material to be disposed or salvaged

_____ Approximate location and depth of main utilities with appropriate notes

_____ Typical sections for temporary construction if not included in TCP plans

General Notes

_____ General design notes applicable to the project. See list of General Notes to be provided by City of Round Rock.

_____ Applicable notes for construction, traffic control, drainage, excavation, grading, embankment, utility relocation, right-of-way, tree protection, rigid & flexible pavement, roadway incidentals, signals, lighting, pavement markings, signs, etc.

_____ Basis of estimate

Survey Data

_____ Benchmark locations and numbers

_____ Control point coordinates, locations, elevations, and detailed descriptions

_____ Notation to vertical datum and the horizontal coordinate system

_____ Horizontal alignment and annotation (Stations, bearings, PC's, PT's, etc.)

Quantity Sheets

_____ Final Summary Sheets (All Bid Items and Totals)

_____ All pay items are included on the summary sheet(s)

_____ Item descriptions agree with standard agency item descriptions and units

_____ All items have item code number, description, unit, quantities, and total

_____ Items for bid alternates

_____ Different summary tables for different project elements (roadway, drainage, etc.)

Quantity Sheets (cont.)

_____ Special notes or remarks

_____ All quantities per plan sheet (drainage & driveway items per structure & each)

_____ Acceptable culvert pipes & pipe type, class and thickness

Traffic Control / Construction Sequence

_____ Sequence of construction general notes

_____ Sequence of work outline for Traffic Control (showing basic concept of how to handle traffic during construction, including preliminary phasing)

_____ Preliminary Intersection Layouts

_____ Traffic control plans, typical sections, and narrative for each construction phase

_____ Plans show proposed phase work, construction zones, temporary signs with standard numbers, temporary markings & markers with standard numbers, barricades, detours, traffic flow direction, location and dimension of all temporary traffic items, legend, scale, and seal or preliminary stamp

_____ Typical sections showing phase number and stations ranges, proposed and constructed work with dimensions for each phase, lane widths and flow direction of all traffic lanes, applicable channelizing devices between traffic lanes and construction zone, clear zones, baselines, and slopes of temporary and permanent graded and paved segments

_____ Narrative includes necessary steps for construction, traffic pattern changes, and day & time restrictions for lane reductions, roadway closures, or general work

_____ Apply appropriate plan legend and hatching to distinguish proposed work from constructed elements

_____ Verify all pavement drop-offs have proper treatment

_____ Verify all temporary barriers have proper end treatment

_____ Check for necessary speed reductions and apply signage accordingly

_____ Verify that all aspects of the whole project and its phases are constructible based on the information provided in the traffic control sheets

_____ Show or reference typical & modified traffic control application diagrams in accordance with TMUTCD and TxDOT Standards

Roadway Plans

_____ North arrow, scale and legend

_____ Show existing roadway features including: roadway alignments, edge of pavement and curb, medians, driveways, drainage structures, utilities, sidewalks, etc. Existing roadways and structures to be closed or removed.

_____ Boundaries (city, county, etc.), bodies of water (streams, lakes, rivers, etc.), street and roadway names

_____ Alignment baseline stationing tick marks and labels every 100 ft, curve and point of intersection data, bearings, equations, and critical points stations such as PIs, PCs, PTs, etc.

_____ Intersection data (Stations, edge of pavement radius, etc.) of all proposed driveways and connecting roadways

Project Name/Number: _____

Type of Work: _____

100% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Roadway Plans (cont.)

_____ Existing and proposed ROW and permanent easement lines and widths at each break within project limits

_____ Proposed pavement (lane and shoulder) widths and cross slopes at all break points and transitions, lane direction arrow, prop. curb and sidewalks

_____ Indicate structure number, quantity, location, type, size of all proposed drainage structures

_____ Location, type, and limits or lengths of proposed roadway elements with appropriate notation

_____ Ensure Minimum Design Values are met

_____ Begin & end project notation and Stations to cover all proposed work

_____ Show all work constrained to ROW and/or easements, including temporary construction easements and structure demolition limits

_____ Access control lines, notes, and limits

_____ Temporary construction or slope easements lines showing widths and limits

_____ Property lines and ownership data

_____ Superelevation, normal crown, and transition locations and limits

_____ Notation for structure removal, structure repair, or proposed structure (location, begin and end stations, type, dimensions, etc.) including bridges, retaining walls, sound walls, and sign bridges

_____ Location of borings or test pits for subsurface investigations

_____ Erosion control items (location, type, limits, etc.) with labels, if separate plans are not provided

_____ Limits for ROW clearing, unsuitable material, pavement removal, etc.

Roadway Profile

_____ Stations along the bottom at 50 ft. intervals and datum elevations along the sides

_____ Profile grade line (PGL) and existing ground line with elevations at 50' to 2 decimal places

_____ Vertical alignment data (Grades in percent to 2 decimal places, VPI Station, elevation, curve length, K value, begin and end curve Station and elevation, etc.)

_____ All proposed drainage or other structures

_____ Existing utilities

_____ Vertical Clearances (where applicable)

_____ Ensure Minimum K-values are met

_____ Left and right ditch flow lines if not shown on Drainage P&P sheets

_____ Clearances for railroads, roads, streambeds, and between structures and/or utilities

_____ Profiles for connecting roadways and driveways

_____ Limits of proposed and existing grades

_____ Beginning and end Stations for proposed structures

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

100% Submission

Design and Construction Standards - Plan Checklist

Drainage Area Map

_____ Watershed area, limits, and directional flow arrows

_____ Tributaries, highways, etc.

_____ County and city boundaries

_____ North arrow & project location

_____ Peak discharge computation method and flow values for 25 & 100 year storm events

Hydraulic Data

_____ Peak discharge computation method and flow values for all design year storm events

_____ For bridges, show bridge cross section summary table (velocity, water surface elevation, energy grade line, flow area, and top width for the natural, existing, and proposed conditions for the design and 100-year flows at the various sections along the reach being modeled)

_____ For bridges, show bridge summary table (existing, proposed, and difference of water surface elevations for the design and 100-year storm events)

_____ For bridges, show typical stream cross section at the bridge location with proposed road profile

_____ For culverts, show input and output culvert hydraulic parameters

_____ For storm sewers, show input and output parameters for storm sewers

_____ For ditches, show input and output for open channel flow analysis data

Culvert Layouts

_____ Plan and profile view for bridge class culverts or cross section for regular culverts

_____ Plan view – north arrow, begin & end of structure Stations and elevations, structure & roadway baselines with skew angle, traffic flow direction, etc.

_____ Roadway cross section along culvert centerline

_____ Existing & proposed grade lines, ROW lines and width, easements, etc.

_____ Roadway baseline, skew angle, and flow direction

_____ Structure slope & flow line elevations, upstream and downstream soil slopes, and structure dimensions from baseline

_____ Length, size, type, skew, and slope of structure

_____ End treatment size, type, and dimensions

_____ Roadway elements (pavement depth & width, barriers, guardrail, slope treatment, etc.)

_____ Description of existing and proposed structure elements with proper labels for agency standards

_____ Erosion control treatment type, size, and depth

_____ Peak discharge, velocity, and upstream and downstream WSE of design storm

_____ Utilities and clearances to proposed elements

_____ Limits of trench excavation protection

Project Name/Number: _____

Type of Work: _____

100% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Drainage Plan and Profile

_____ Show legend for plan and profile elements

_____ Plan – north arrow, baseline stations, ROW

_____ Plan – show drainage area boundaries

_____ Plan – show drainage structures (number, type, length, layout, station, offset, etc.), links (number, type, length, flow direction, etc.), and outlet pipes (number, flow direction, etc.)

_____ Profile – show drainage structures (number, layout, type, control elevations), links (layout, size, type, length, design flow, flow capacity, etc.), and hydraulic grade line (HGL)

_____ Profile – show natural ground and PGL

_____ Plan – show ditch and channel alignments

_____ Profile – show flow lines for ditches and channels

_____ Reference to other roadway or drainage plans

Utilities

_____ Include utility layout sheets showing latest information for existing utilities

_____ Include proper notation and reference to other utility drawings, if applicable

Retaining Walls

_____ Preliminary retaining wall layouts showing limits, ranges in height, and type of wall

_____ Final retaining wall layouts showing typical sections, geometry data, and detail sheets

_____ For bridges show bridge layouts (plan and profile), typical sections, foundation data, and detail sheets

Bridge Layout – Plan View

_____ Baselines with stations, bearings, alignment data, and north arrow

_____ Pavement width (roadway & shoulders), and traffic flow or stream flow

_____ Cross slope and superelevation data

_____ Begin and end structure stations

_____ ROW & easement lines

_____ Bent numbers, stations and bearings

_____ Skew angle of structure and bents

_____ Existing contours

_____ Railing type, location, and limits

_____ Limits & slope of riprap or erosion control treatment

_____ Armor joint type, location, and seal size

_____ Traffic direction and stream flow

Bridge Layout – Plan View (cont.)

_____ Approach slab and curb returns

_____ Location of test holes

_____ Horizontal clearances (structure, utilities, railroad, etc.)

_____ Bridge Protection Assembly

_____ Type and limits of riprap (and blockouts, if required)

_____ Locate bridge drain and/or lighting brackets stations, when applicable.

_____ Show existing structure (dashed) on plan view, with existing National Bridge Inventory (NBI) number

_____ For staged (or phased) construction, show dimension to staged construction joints

_____ For widenings, show existing structure, existing NBI number, overall and roadway widths of existing and new structures

Bridge Layout – Profile View

_____ Provide national bridge inventory (NBI) number, if applicable

_____ Type, length, and size of units or spans

_____ Overall length, payment limits, railing type & post spacing

_____ Existing & proposed ground lines with grid elevations and stations

_____ Existing & proposed water surface elevations for design year storm if applicable

_____ Vertical curve data and profile grade line(s)

_____ Begin and end structure stations and elevations

_____ Bent numbers & fixed/ expansion conditions at all bents

_____ Column heights and type, length, size, and number of foundation elements

_____ Hydraulics data (100 year and design flood elevations) and calculated scour depth

_____ Limits & slope of riprap or erosion control treatment

_____ Minimum clearances to proposed and existing elements

_____ Test holes, data, and information such as bridge foundation notes (if required by geotechnical engineer)

_____ Identify all traffic elements (detectors, conduits, etc.) in structure elements

Bridge Typical Sections

_____ Roadway width and cross slope, shoulder width and cross slope

_____ Type, location, and width of barriers or bridge railing

_____ Show sidewalks, curbs, medians, etc.

_____ Type, location, depth, and width of structural elements (deck, railing, beams, etc.)

_____ Show baseline location and applicable station ranges

_____ Show control point for Profile Grade Line (PGL)

Project Name/Number: _____

Type of Work: _____

100% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Traffic Signals & Illumination

_____ Signals – signal layouts, signal elevation, signal wiring, and signal phasing

_____ Signals - show proposed and existing signal elements (pole, mast arm, signal heads, conduits, detectors, traffic boxes, etc.)

_____ Show all applicable TMS elements (cameras, changeable message signs, vehicle detection, etc.)

_____ Illumination – show layouts that include lighting poles, mounted luminaire, lighting details, electric service, etc.

Signing & Pavement Markings

_____ North arrow, street names, legend, pavement lines and traffic lanes, shoulders, alignment with stations, ROW, etc.

_____ Show existing elements to be removed, relocated, re-striped, or to remain in place

_____ Show proposed elements (markings, markers, signs, delineators, etc.)

_____ Show begin and end stations for proposed striping

_____ Standard number, size, type, color, and dimensions of proposed elements

_____ Spacing and width of lane lines

_____ Spacing and width of markings lines for crosshatched areas

_____ Show permanent elements only, temporary items should be shown on TCP

_____ Label elements according to legend or reference other drawings as appropriate

Environmental / Erosion Control

_____ Include a narrative (site description, list of applicable soil stabilization and other erosion control devices, offsite requirements, general notes, and special requirements)

_____ Show north arrow, street names, legend, pavement lines and traffic lanes, shoulders, alignment with stations, ROW, etc. on plans

_____ Show ROW, proposed pavement lines, and all drainage structures

_____ Show existing topo features and existing contours

_____ Show and label temporary & permanent erosion control devices and measures

_____ Include legend as appropriate (silt fence, rock filter dam, construction exit, etc.)

Project Name/Number: _____

Type of Work: _____

100% Submission

Design and Construction Standards - Plan Checklist

Cross Sections

_____ Cut sections at 50' intervals and place 2 to 3 sections per sheet

_____ Show existing ground and proposed segments with appropriate labels

_____ Show roadway name, left and right grid distances, and datum elevations

_____ Show cross section station and PGL elevation

_____ Show width and slope (% or ratio) of all proposed segments

_____ Show elevations at break points (shoulders, ditch flow line, catch point, etc.)

_____ Show dimensions from baseline to ROW

_____ Show retaining walls, railing, barrier, and guardrail as necessary

_____ Indicate begin and end project station

General

_____ All information contained within printing margins

_____ Correct lettering size – minimum text size (Leroy 80)

_____ Notes reference correct sheet number or drawing name

_____ No blank spaces or missing information

_____ Ensure all Standard Details and Drawings pertaining to the contract are added

_____ Drawings & Details are clear and legible

_____ Title block is correct (sheet title & number, project number, etc.)

_____ Professional (PE, RPLS, etc.) seal or preliminary stamp along with the date on all drawings except for Standard Drawings & Standard Details

_____ All applicable standards are included and use of standards is noted in plans

_____ All modified Standard Details and Drawings have been checked and sealed.

_____ Design features are consistent with design standards and design speed

_____ Conformance with previously approved design submissions and comments

_____ Conformance to commitments made in the environmental assessment

_____ Clear zone requirements are met

_____ Roadside safety requirements have been addressed (concrete barriers, impact attenuators, guardrail and guardrail terminals, etc.)

_____ Conformance with applicable standards, regulations, or manuals (ADA, TMUTCD, AASHTO, City of Round Rock Design and Construction Standards, etc.)

_____ All pay items shown in the plans (unless noted to be placed at the engineer's discretion)

_____ All bid items identified

_____ Details included for items not covered by standards

_____ No conflicts between plans, general notes, specifications, standards, provisions, etc.

_____ Sidewalks and ramps meet ADA requirements (4' minimum width and 2% max cross slope, etc.)

_____ Drainage structures are adequate for design storm

Project Name/Number: _____

Type of Work: _____

100% Submission

ROUND ROCK TEXAS

Design and Construction Standards - Plan Checklist

Design Submittal Supplements

_____ Design Summary Report (DSR)

_____ Design schedule - update

_____ Initial construction cost estimate

_____ Initial construction time determination

_____ Special Provision form for right-of-way acquisition

_____ Special Provision form for utility relocations

_____ Special Provision form for environmental clearance

_____ Geotechnical investigations report

_____ Drainage report, if applicable

_____ Database of property owner information and executed Right-of-Entry forms

_____ Submittal package in pdf format

_____ Electronic (CAD) design files for earthwork calculations, .zip file

Notes and comments:

_____ _____

ENGINEER OF RECORD Date

Print Sign

ROUND ROCK TEXAS

Project Name/Number: _____

Type of Work: _____

Pavement

Pavement Design Checklist

Completed Checklist Must be Submitted with 60%, 90% and 100% Design

Project Information

_____ Narrative discussing the overall project, scope of work, site particulars, drainage, and topographic features

_____ Project location map and description of proposed improvements

_____ Existing pavement section (if applicable)

_____ Existing subgrade conditions (referenced from Geotechnical Report);

_____ Traffic data and any adjustments

_____ Project specific factors used for selecting the pavement type

_____ Summary of discussions with City officials and waivers received (if any);

Pavement Design Summary

_____ Summary of all pavement design input values

_____ Design output values for typical pavement sections

_____ Recommended subgrade stabilization measures (if applicable)

_____ Recommended pavement section or sections

_____ Recommended pavement related specifications (e.g., subgrade preparation, lime addition, flex base materials and compaction, HMAC, etc.)

_____ Recommendations to improve drainage of subgrade/base layers (i.e., edge drains)

_____ Proposed detour pavement thickness (widened pavement or separate detour);

_____ If existing pavement is to be used as a detour, provide recommendations as to suitability of use and recommended traffic flow diagram

_____ Construction recommendations including drainage and groundwater control

Appendices

_____ Flexible Pavement Designs: FPS-21 output with mechanistic check and modified Texas Triaxial check

_____ Rigid Pavement Designs: Streetpave12 output

_____ _____

ENGINEER OF RECORD Date

Print Sign

9.6.D Clearance Forms

Project Name/Number: _____

City of Round Rock
CERTIFICATIONS

Project : _____

Hwy. : _____

Limits : From: _____

To: _____

ENCROACHMENT CERTIFICATION

This is to certify that no right-of-way encroachments existed within the limits of this project or all removals of right-of-way encroachments have been completed.

ROW CERTIFICATION

This is to certify that acquisition of right-of-way was not required for this project.

UTILITY CERTIFICATION

This is to certify that utility adjustments were not required or have been completed for this project.

RAILROAD CERTIFICATION

This is to certify that no railroad work was required for this project.

Recommended By:

_____Date: _____
Engineer of Record

Submitted By:

_____ Date: _____
City of Round Rock
Transportation Director

Project Name/Number: _____

City of Round Rock
ENVIRONMENTAL CLEARANCE CERTIFICATION

Project : _____

Hwy. : _____

Limits : From: _____

To: _____

ENVIRONMENTAL CERTIFICATION

This is to certify that all necessary environmental permits for the subject project have been acquired or have been identified within the limits of this project.

Recommended By:

_____Date: _____
Engineer of Record

Submitted By:

_____ Date: _____
City of Round Rock
Transportation Director

Project Name/Number: _____

City of Round Rock
UTILITY CLEARANCE LETTER

Project : _____

Hwy. : _____

Limits : **From:** _____

To: _____

The purpose of this Utility Clearance Letter is to inform the **City of Round Rock** of the anticipated dates by which **Utility's** facilities that are in conflict with the above project limits will be adjusted. The dates below assume that the **City** has acquired all necessary right-of-way for the project, that sufficient plans indicating the proposed highway improvements have been submitted to **Utility**, and that design changes necessitating material utility facility redesign do not occur.

Utility Company Name: _____

Anticipated Construction Start Date: _____

Anticipated Duration of Construction: _____

Anticipated Construction Completion Date: _____

The information provided above is strictly an estimate and is provided to the **City** solely for **the City's** planning purposes. This letter is not intended to create any legally binding commitments on either **Utility** or **City,** nor to waive any rights **Utility** or **City** might otherwise possess.

If there is a conflict between prior submitted dates and those shown in this letter, the dates set forth above should be used for **City's** planning purposes.

_____ _____

Authorized Utility Representative Date

9.6.E Design Comment / Response Log

DESIGN REVIEW COMMENT AND RESOLUTION FORM

PROJECT NO.: _____

DESCRIPTION: _____

DESIGNER: _____

SUBMITTAL: (Sample Text - 60% Design Submission)

City of Round Rock Transportation Department

Reviewer Name: _____

Date: _____

Item No.	Sheet or Page No.	Comment	Initial Action	Response	QC Review (Initials)	Final Action Verified
Completed by Reviewer			Completed by Designer			Reviewer
P-1	12	(Sample Text - No North Arrow) (Sample Text - Stationing Font Too Small) (Sample Text - Etc.)	A	(Sample Text - See attached Sheet 12 with revision)		
P-2	24	(Sample Text - Existing ROW not shown)	B	(Sample Text - Will include in 90%)		
P-3	36	(Sample Text - Left turn vehicle queue appears short)	C	(Sample Text - Will discuss at progress meeting)		
E-1	2	(Sample Text - Units for Lime Slurry must be tons)	D	(Sample Text - Lime Slurry will not be used on this project)		
E-2	3	(Sample Text - Reduce Contingency to 15%)	A			
S-1	5	(Sample Text - Special Provisions Missing)	B	(Sample Text - Appropriate Special Provisions will be provided with 90% Submission)		
S-2	7	(Sample Text - Special Provisions Missing)	B	(Sample Text - Appropriate Special Provisions will be provided with 90% Submission)		

PREFIX FOR COMMENT NO'S - PLANS =P, SPEC. PROVS OR SPECIFICATIONS=S, EST.=E, OTHER = O

ACTION A= AGREE, WILL INCORPORATE, B=AGREE, WILL INCORPORATE NEXT SUBMITTAL C=WILL EVALUATE/DISCUSS D=DELETE COMMENT

DESIGN REVIEW COMMENT AND RESOLUTION FORM

PROJECT NO.: _____

DESCRIPTION: _____

DESIGNER: _____

SUBMITTAL: (Sample Text - 60% Design Submission)

City of Round Rock Transportation Department

Reviewer Name: _____

Date: _____

Item No.	Sheet or Page No.	Comment	Initial Action	Response	QC Review (Initials)	Final Action Verified
Completed by Reviewer			Completed by Designer			Reviewer
S-3	8	(Sample Text - Special Provisions Missing)	B	(Sample Text - Appropriate Special Provisions will be provided with 90% Submission)		

PREFIX FOR COMMENT NO'S - PLANS =P, SPEC. PROVS OR SPECIFICATIONS=S, EST.=E, OTHER = O

ACTION A= AGREE, WILL INCORPORATE, B=AGREE, WILL INCORPORATE NEXT SUBMITTAL C=WILL EVALUATE/DISCUSS D=DELETE COMMENT

CITY OF ROUND ROCK, TEXAS

PROJECT NAME LINE 1
PROJECT NAME LINE 2

FUNDING SOURCE-01
FUNDING SOURCE-02

SUBMITTAL STATUS
DATE

STATE	COUNTY	CITY
TEXAS	WILLIAMSON	ROUND ROCK
PROJECT NO	ROADWAY	SHEET NO.
XXXXXX	XXXXXX	XXXXXX
LETTING DATE:		
DATE WORK BEGAN:		
DATE WORK ACCEPTED:		
CONTRACTOR:		
FINAL COST:		

ROADWAY	FUNCTIONAL CLASSIFICATION	DESIGN SPEED
XXXXX	XXXXXX	XX MPH
XXXXX	XXXXXX	XX MPH
XXXXX	XXXXXX	XX MPH
XXXXX	XXXXXX	XX MPH

	LENGTH IN FEET			LENGTH IN MILES		
ALIGNMENT	ROADWAY LENGTH	BRIDGE LENGTH	NET LENGTH	ROADWAY LENGTH	BRIDGE LENGTH	NET LENGTH
XXXX	X,XXX	XXX	X,XXX	X.XXX	X.XXX	X.XXX
XXXX	X,XXX	XXX	X,XXX	X.XXX	X.XXX	X.XXX
XXXX	X,XXX	XXX	X,XXX	X.XXX	X.XXX	X.XXX

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

FOR THE CONSTRUCTION OF (ENTER PROJECT DESCRIPTION)

BEGIN PROJECT
XXX STA XXX+XX.XX

END PROJECT
XXX STA XXX+XX.XX

LOCATION MAP NOT TO SCALE

NO EQUATIONS
NO EXCEPTIONS

ACCEPTED FOR CONSTRUCTION:

CITY OF ROUND ROCK, TEXAS — DATE
TRANSPORTATION DEPARTMENT

STATE OF TEXAS
COUNTY OF WILLIAMSON
I, (Licensed Professional Engineer), do hereby certify that the Public Works and Drainage Improvements described herein have been designed in compliance with the subdivision and building regulation ordinances and stormwater drainage policy adopted by the City of Round Rock, Texas.

(Seal & Signature of Professional Engineer)

DATE

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

TRAFFIC PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

TRAFFIC CONTROL PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

EROSION CONTROL PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

SURVEY CONTROL PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

ILLUMINATION SHEETS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

ROADWAY PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

UTILITY PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

DRAINAGE PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

CROSS SECTION SHEETS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

RETAINING WALL PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

BRIDGE PLANS

SHEET NO.	DESCRIPTION
-	-
-	-
-	-

RAS REVIEW AND INSPECTION REQUIRED
TDLR NO. EABPRJ_____

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF ROUND ROCK MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

CLIENT LOGO

INDEX OF SHEETS

SHEET	GENERAL
X	TITLE SHEET
X - X	INDEX OF SHEETS
X - X	PROJECT LAYOUT
X - X	ROADWAY TYPICAL SECTIONS
X - X	GENERAL NOTES
X - X	ESTIMATE AND QUANTITY
X	SUMMARY OF XXXXX

SHEET	TRAFFIC CONTROL PLANS
X	TRAFFIC CONTROL GENERAL NOTES
X	TRAFFIC CONTROL NARRATIVE & LAYOUT
X - X	TRAFFIC CONTROL PLAN
	STANDARDS
X - X	XXXXXXXX

SHEET	SURVEY CONTROL PLANS
X - X	PLANS

SHEET	ROADWAY PLANS
X - X	ROADWAY ALIGNMENT DATA
X - X	ROADWAY PLAN & PROFILE SHEETS
X - X	ROADWAY DETAIL SHEETS
	STANDARDS
X - X	XXXXXXXX

SHEET	DRAINAGE PLANS
X - X	DRAINAGE AREA MAPS
X - X	HYDRAULIC DATA SHEETS
X - X	STORM SEWER PLANS
X - X	STORM SEWER PROFILES
X - X	DRAINAGE DETAILS
	STANDARDS
X - X	XXXXXXXX

SHEET	RETAINING WALL PLANS
X - X	RETAINING WALL LAYOUT
X - X	RETAINING WALL PLAN & PROFILE SHEETS
X - X	RETAINING WALL DETAILS
	STANDARDS
X - X	XXXXXXXX

SHEET	BRIDGE PLANS
X - X	BRIDGE WALL PLAN & PROFILE SHEETS
X - X	BRIDGE DETAILS
	STANDARDS
X - X	XXXXXXXX

SHEET	TRAFFIC PLANS
X - X	ILLUMINATION SHEETS
X - X	SIGNING & PAVEMENT MARKING SHEETS
X - X	LARGE SIGN DETAILS
X - X	TRAFFIC SIGNAL SHEETS
X - X	TMS SHEETS
	STANDARDS
X - X	XXXXXXXX

SHEET	EROSION CONTROL PLANS
X	STORM WATER POLLUTION, PREVENTION PLAN NOTES
X - X	STORM WATER POLLUTION, PREVENTION PLAN SHEETS
	STANDARDS
X - X	XXXXXXXX

SHEET	ILLUMINATION PLANS
X - X	ILLUMINATION SHEETS

SHEET	UTILITY PLANS
X - X	UTILITY SHEETS

SHEET	CROSS SECTIONS
X - X	CROSS SECTION SHEETS

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL 'NOTE TO DESIGNER' BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

The Standard Sheets specifically identified above have been selected by me or under my supervision as being applicable to the project.

_____, P.E. _____ Date

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

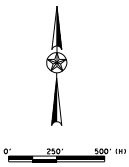
INDEX OF SHEETS

SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	
DRAWN: XXX	XXX
CHECKED: XXX	

...\COM\BASE SHEETS\INDEX.dgn

5/15/2018 11:54:01 AM



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P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

PROJECT LAYOUT

SCALE: 1"=500' (H)

SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

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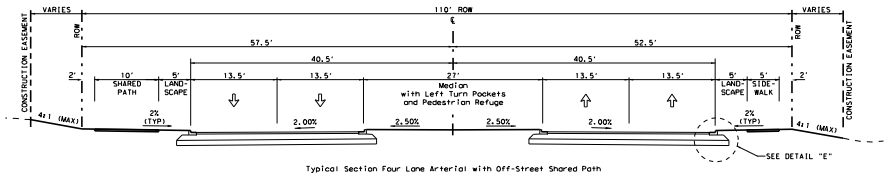
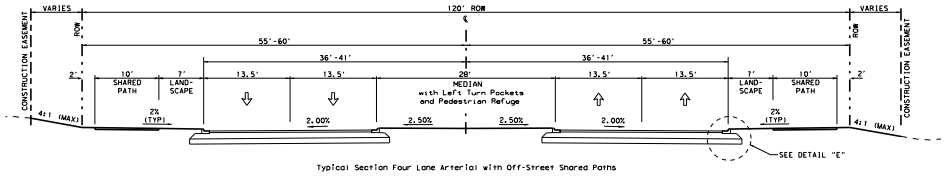
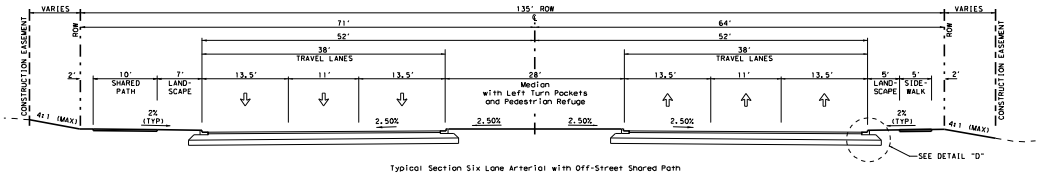
MODIFIED



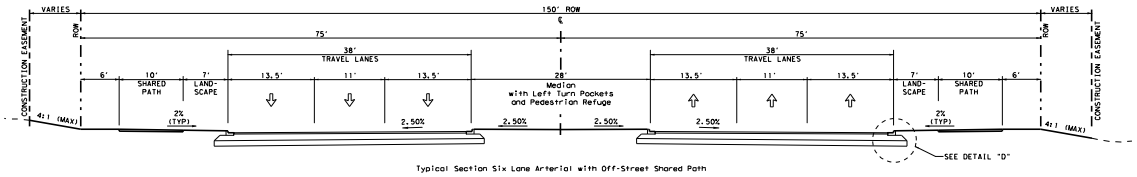
Typical Section Four Lane Arterial with Off-Street Shared Path



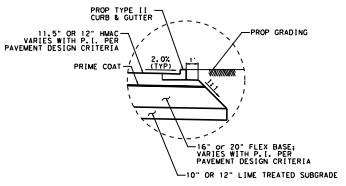
Typical Section Four Lane Arterial with Off-Street Shared Paths



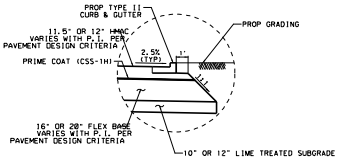
Typical Section Six Lane Arterial with Off-Street Shared Path



Typical Section Six Lane Arterial with Off-Street Shared Path



DETAIL E
PROPOSED PAVEMENT SECTION
URBAN ARTERIAL - HIGH TRAFFIC



DETAIL D
PROPOSED PAVEMENT SECTION
URBAN ARTERIAL - LOW TRAFFIC

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P.E. SEAL REQUIRED
DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TYPICAL SECTIONS ARTERIAL STREETS

SCALE: NTS
SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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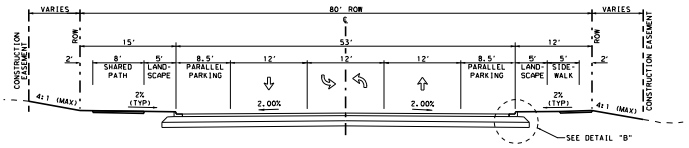
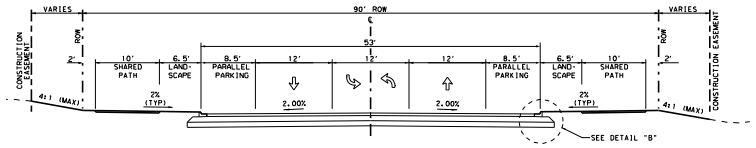
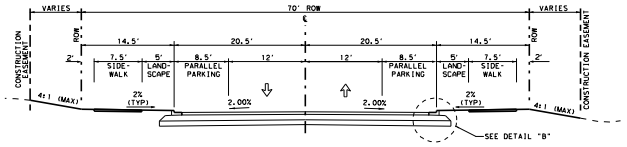
5/15/2018 11:54:02 AM
morrisw



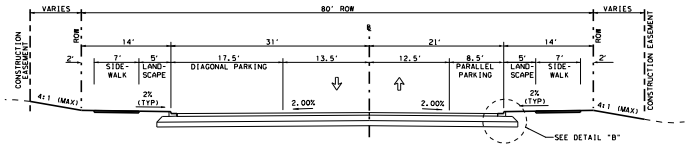
Typical Section Three Lane Collector with Off Street Shared Path and Parallel Parking



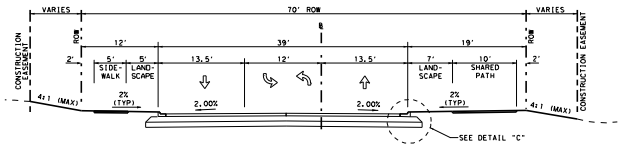
Typical Section Three Lane Collector with Off Street Shared Paths and Parallel Parking



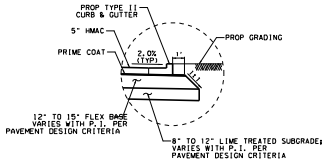
Typical Section Two Lane Commercial Collector with on Street Parallel Parking



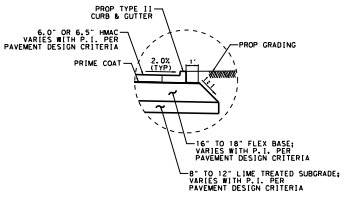
Typical Section Two Lane Collector with Diagonal and Parallel Parking



Typical Section Three Lane Collector with Off Street Shared Path



DETAIL B
PROPOSED PAVEMENT SECTION
URBAN COLLECTOR - LOW TRAFFIC



DETAIL C
PROPOSED PAVEMENT SECTION
URBAN COLLECTOR - HIGH TRAFFIC

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P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TYPICAL SECTIONS COLLECTOR STREETS

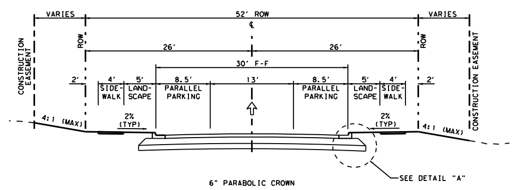
SCALE: NTS

SHEET XX OF XX

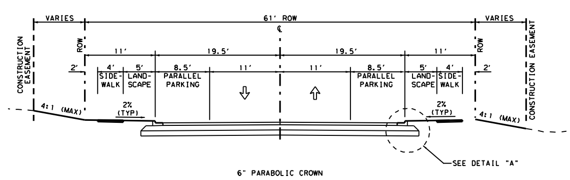
PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

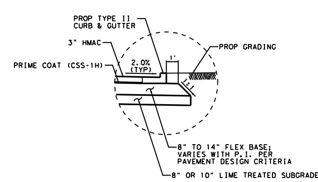
THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.



Typical Section Local Residential Street



Typical Section Two Lane Local Street With Parking



DETAIL A
PROPOSED PAVEMENT SECTION
URBAN LOCAL

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TYPICAL SECTIONS
LOCAL STREETS

SCALE: NTS
SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

5/15/2018 11:54:04 AM

morrisey

GENERAL CONSTRUCTION NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

STREET NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

STORM WATER NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

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ILLUMINATION NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

UTILITY NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

MISCELLANEOUS NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

SW3P NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

LANDSCAPING NOTES:

1. SAMPLE
2. SAMPLE
3. SAMPLE

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

GENERAL NOTES

SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

...\CONFIGBASE_07-GENERAL_NOTES.dgn

5/15/2018 11:54:05 AM

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BENCH MARK LIST

TBM	DESCRIPTION	ELEVATION
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HORIZONTAL & VERTICAL DATUM

HORIZONTAL DATUM IS THE STATE PLANE COORDINATE SYSTEM, TEXAS CENTRAL ZONE, NAD83, BASED ON **********. COMBINED SCALE FACTOR FROM SURFACE TO GRID COORDINATES IS **********. SURFACE COORDINATES ARE SHOWN ON SURVEY. VERTICAL DATUM IS NAD83 BASED ON **********.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

SURVEY DATA

SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

...\COMMBASE_08-SURVEY-DATA.dgn

5/15/2018 11:54:06 AM

MODIFIED

DISCIPLINE 1

ITEM NO.	DESC. CODE	DESCRIPTION	UNIT	QUANTITY
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DISCIPLINE 2

ITEM NO.	DESC. CODE	DESCRIPTION	UNIT	QUANTITY
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THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

DISCIPLINE 3

ITEM NO.	DESC. CODE	DESCRIPTION	UNIT	QUANTITY
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DISCIPLINE 4

ITEM NO.	DESC. CODE	DESCRIPTION	UNIT	QUANTITY
---	---	---	--	----

DISCIPLINE 5

ITEM NO.	DESC. CODE	DESCRIPTION	UNIT	QUANTITY
---	---	---	--	----

DISCIPLINE 6

ITEM NO.	DESC. CODE	DESCRIPTION	UNIT	QUANTITY
---	---	---	--	----

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

ESTIMATE OF QUANTITIES AND SUMMARY SHEETS

SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

...\CONF\BASE-BP-QUANTITY_SUMMARY.dgn
5/15/2018 11:54:07 AM

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

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LEGEND (SAMPLE)

A	EXIST PAVEMENT MARKING
B	WK ZN PAV MRK REMOV (W) 4" (SLD)
C	WK ZN PAV MRK REMOV (W) 4" (BRK)
D	WK ZN PAV MRK REMOV (Y) 4" (SLD)
E	WK ZN PAV MRK REMOV (W) 8" (SLD)
F	WK ZN PAV MRK REMOV (W) 12" (SLD)
G	WK ZN PAV MRK REMOV (W) 24" (SLD)
H	WK ZN PAV MRK REMOV (W) 12" (LNDP)
I	WK ZN PAV MRK REMOV (W) 4" (DOT)
J	WK ZN PAV MRK REMOV (Y) 4" (DOT)
K	WK ZN PAV MRK WORD
L	WK ZN PAV MRK ARROW

TEMP PAVEMENT THIS PAHSE

TEMP PAVEMENT PREVIOUS PHASE

PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

PERMANENT BRIDGE THIS PHASE

EXISTING TRAVEL LANE

PROPOSED TRAVEL LANE

TYPE III BARRICADE

GROUND MOUNTED SIGN

CONCRETE SAFETY BARRIER (CSB)

LOW PROFILE CONC BARRIER (LPCB) W/ DELINEATORS

TEMP ATTENUATOR

TCP DEVICE (DRUMS / VERTICAL PANELS)

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

ARROW BOARD

TEMPORARY RETAINING WALL

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

0' 50' 100' (H)

5/15/2018 11:54:08 AM

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TRAFFIC CONTROL PLAN

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H) SHEET XX OF XX

PROJECT NO:	XXX	SHEET NO.
DESIGNED:	XXX	XXX
DRAWN:	XXX	
CHECKED:	XXX	

...\CORR-BASE-10-TRAFFIC-CONTROL.dgn

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

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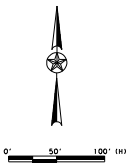

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

ROADWAY ALIGNMENT DATA

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H)

SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

...\CORE_BASE-11-ALIGNMENT-DATA.dgn

5/15/2018 11:54:09 AM

MATCH LINE (ML) STA XX+XX

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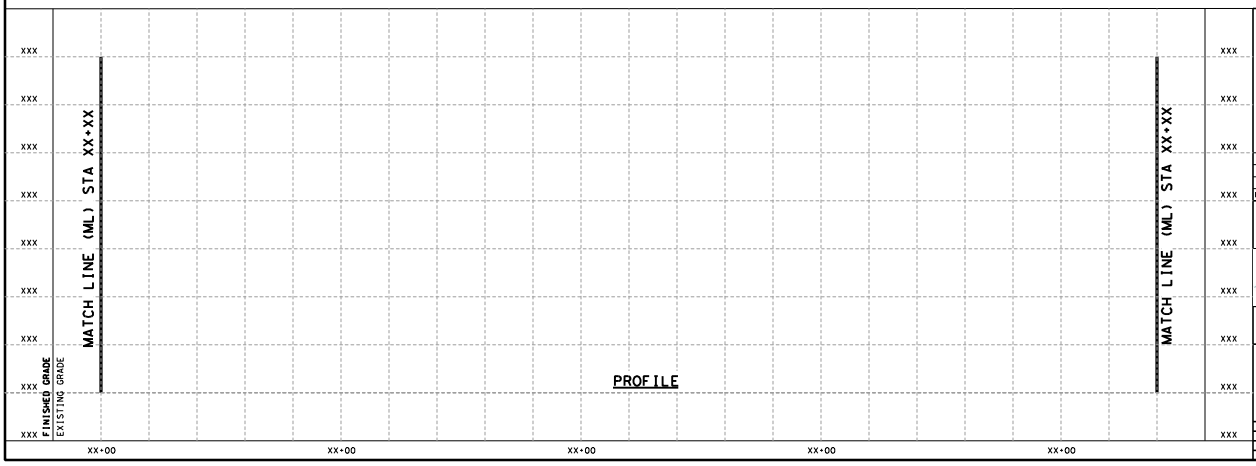
MATCH LINE (ML) STA XX+XX

PLAN

LEGEND (SAMPLE)

(H) 0 2.5' 5' 10' (V)

- (A) CONC RAIL (T551)
- (B) TYPE I OR TYPE II CURB (MONOLITHIC)
- (C) TYPE II CONCRETE CURB & GUTTER
- (D) CONCRETE SIDEWALK (6')
- (E) SHARED USE PATH (10')
- (F) PEDESTRIAN HANDRAIL
- (G) PEDESTRIAN CURB RAMP
- CONCRETE SAFETY BARRIER (CSB)
- CABLE BARRIER
- METAL BEAM GUARDRAIL FENCE (MBGF)
- SINGLE GUARDRAIL TERMINAL (SGT)
- MBGF DOWNSTREAM ANCHOR TERMINAL (DAT)
- MBGF THRIE BEAM TRANSITION
- CRASH CUSHION ATTENUATOR
- EXIST CONTROL OF ACCESS
- PROPOSED CONTROL OF ACCESS
- EXIST ROW
- PROPOSED ROW
- PROPOSED EASEMENT



P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

ROADWAY PLAN & PROFILE

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H), 1"=10' (V) SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

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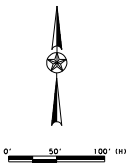

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL 'NOTE TO DESIGNER' BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

DRAINAGE AREAS
-
DRAINAGE CALCULATIONS

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H)

SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

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MOD-1-20

STRUCTURE ID	DESCRIPTION	STATION/OFFSET	TOP OF STRUCTURE ELEVATION	GUTTER FL	PROP FL OF PIPE (NORTH)	PROP FL OF PIPE (SOUTH)	PROP FL OF PIPE (WEST)	PROP FL OF PIPE (EAST)

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

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0' 2.5' 5' 10' (H)
10' (V)

LEGEND (SAMPLE)

- PROPOSED DRAINAGE STRUCTURES
- DRAINAGE AREAS
- PROPOSED DITCH FLOW
- EXISTING DITCH FLOW
- PROPOSED INLET TY I OR TY II W/ DITCH BLOCK
- PROPOSED INLET TY I OR TY II W/O DITCH BLOCK
- CURB INLET
- DROP INLET TYPE A, AD OR AAD
- DITCH BLOCK
- MANHOLE
- SAFETY END TREATEMENT
- HEADWALL OR WINGWALLS
- RIPRAP CONC
- RIPRAP (STONE) (COMMON) (DRY)
- TRENCH REQUIRING EXCEVATION SAFETY SYSTEM

PLAN

PROFILE

XXX XXX XXX XXX XXX

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

STORM SEWER
PLAN & PROFILE

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H), 1"=10' (V) SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

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THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

NOTES (SAMPLE)

0' 2.5' 5' 10' (H)
0' 2.5' 5' 10' (V)

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING NO MOVEMENT OF ADJACENT STRUCTURES, UTILITIES, OR PRIVATE PROPERTY OCCURS AS A RESULT OF THE CONSTRUCTION ACTIVITIES. THE CONTRACTOR MAY ELECT TO PERFORM PRE-CONSTRUCTION AND POST-CONSTRUCTION SURVEYS OF ADJACENT STRUCTURES, UTILITIES, AND/OR PRIVATE PROPERTIES.
2. BOTTOM OF RETAINING WALL PROFILE DOES NOT INCLUDE KEY TAB. SEE TXDOT STANDARD RW 1(H)A FOR DETAILS.
3. REQUIRED EMBEDMENT LENGTH IS 3 FEET. WALL IS MEASURED BETWEEN TOP OF WALL AND 3 FEET BELOW FINISHED GRADE.
4. BORE ELEVATIONS APPROXIMATE. BASED ON FIELD SURVEY BY ENGINEER.

LEGEND (SAMPLE)

RETAINING WALL

UNDERDRAIN

PLAN

ESTIMATED QUANTITIES		

PROFILE

TOP OF WALL
BOTTOM OF WALL
FINISHED GRADE
EXISTING GRADE

XXX
XXXX.XX
XXXX.XX
XX+00

P.E. SEAL REQUIRED
DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS
THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

RETAINING WALL PLAN & PROFILE (WALL NAME)

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H), 1"=10' (V) SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

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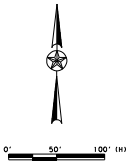
ROADWAY ILLUMINATION ASSEMBLY SHEET SUMMARY			
LUMINAIRE	ML STATION	OFFSET FROM BASELINE	WATT
XX	##+##.##	X' LT	###



MATCH LINE (ML) STA XX+XX

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MATCH LINE (ML) STA XX+XX

LEGEND

- SINGLE 250W HPS FIXTURE
- DUAL 150W HPS FIXTURE
- GROUND BOX TYPE A
- ELECTRICAL SERVICE
- PVC SCH 40 CONDUIT AND WIRING (TRENCH)
- PVC SCH 40 CONDUIT AND WIRING (BORE)

X-X-Ⓧ
- RUN NUMBER
- CIRCUIT NUMBER
- SERVICE NUMBER

PLAN

CONDUIT AND CONDUCTOR RUNS					
RUN NO.	RUN LENGTH (FEET)	GROUND SIZE & LENGTH (FEET)	CONDUCTOR SIZE & LENGTH (FEET)	CONDUIT SIZE & LENGTH (FEET)	
		ELEC CONDR (NO. 10) BARE	ELEC CONDR (NO. 10) INSULATED	CONDT (PVC) (SCHD 40) (2")	CONDT (PVC) (SCHD 80) (2") (BORE)
X	XX	X	X	X	X
TOTAL	X	X	X	X	X

ESTIMATED QUANTITIES		
DESCRIPTION	UNITS	SHEET TOTAL
DRILL SHAFT (30 IN)	LF	X
HAPCO RD ILLUM POLE 25S - 6	EA	X
CONDT (PVC) (SCHD 40) (2")	LF	X
CONDT (PVC) (SCHD 80) (2") (BORE)	LF	X
CONDT (PVC) (SCHD 40) (4")	LF	X
ELEC CONDR (NO. 10) BARE	LF	X
ELEC CONDR (NO. 10) INSULATED	LF	X
GROUND BOX TY A (122311) W / APRON	EA	X
GROUND BOX TY D (162922) W / APRON	EA	X
240 V ELECTRICAL SERVICE	EA	X

* FOR CONTRACTOR INFO ONLY, TO BE PAID FOR AND INSTALLED BY OTHERS.

NOTES (SAMPLE)

1. INSTALLATION SHALL CONFORM TO NFPA 70, NATIONAL ELECTRIC CODE (NEC) 2011 EDITION.
2. CONTRACTOR SHALL CONTACT ALL UTILITY AGENCIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT AND/OR DAMAGE TO THESE UTILITIES.
3. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS WITH UTILITY COMPANY FOR SERVICE.
4. LOCATION OF ASSEMBLIES MAY BE ADJUSTED IN FIELD TO ACCOMMODATE ROADWAY FEATURES.
5. CONDUIT SHALL BE INSTALLED AT A MINIMUM OF 2' BELOW FINISHED GRADE. REFER TO UTILITY LAYOUT SHEETS FOR PROPOSED AND EXISTING UTILITIES.
6. FOUR INCH SLEEVES TO BE USED FOR FUTURE IRRIGATION.
7. PROPOSED ELECTRICAL SERVICE SHALL BE UNDERGROUND.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

ILLUMINATION LAYOUT

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H)	SHEET XX OF XX
PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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MOFFSHOR

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

MATCH LINE (ML) STA XX+XX

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0' 50' 100' (H)

LEGEND (SAMPLE)

- (A) 4" BROKEN WHITE
- (B) 8" SOLID WHITE
- (C) 12" SOLID WHITE
- (D) 24" SOLID WHITE
- (E) 4" SOLID YELLOW
- (F) 4" BROKEN YELLOW
- (G) SOLID WHITE SYMBOL (ARROW)
- (H) SOLID WHITE WORD (ONLY)
- (I) REFL PVMT MRKRS (TYPE I-C)
- (J) REFL PVMT MRKRS (TYPE II-A-A)
- (K) REFL PVMT MRKRS (TYPE II-B-B)
- (L) YIELD TRIANGLES
- PROPOSED SIGN

NOTES (SAMPLE)

1. ALL SIGNING AND STRIPING MUST ADHERE TO APPROPRIATE CORR, TXDOT/TMUTCD STANDARDS, UNLESS OTHERWISE APPROVED BY ENGINEER.
2. ALL SMALL SIGN LOCATIONS ARE APPROXIMATE UNLESS OTHERWISE NOTED. FIELD ADJUSTMENT MAY BE NECESSARY TO COMPLY WITH APPLICABLE STANDARDS.
3. REFER TO TYPICAL SECTIONS FOR LANE WIDTHS.
4. ALL PAVEMENT MARKINGS ANS SIGNAGE SHALL COMPLY WITH TMUTCD STANDARDS. STREET NAME AND LETTER SIZING SHALL BE IN ACCORDANCE WITH TMUTCD TABLE 2D-2. PAVEMENT MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
5. ALL SIGNS SHALL BE FACED WITH HIGH INTENSITY RETROREFLECTIVE GRADE SHEETING IN ACCORDANCE WITH DMS-8300 "SIGN FACE MATERIALS".

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

SIGNING & PAVEMENT MARKING LAYOUT

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H) SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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GENERAL NOTES

1. IT IS THE INTENTION OF THESE PLANS TO PROVIDE FULLY OPERATIONAL TRAFFIC SIGNALS. ANY ITEMS REQUIRED BUT OMITTED ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBSIDIARY TO THE APPROPRIATE BID ITEM.

2. ANY EXISTING PAVEMENT, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY OF ROUND ROCK STANDARDS.

3. ALL CONSTRUCTION SIGNS AND BARRICADES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND BE CONSISTENT WITH TXDOT BARRICADE, CONSTRUCTION, AND TRAFFIC CONTROL PLAN STANDARDS.

4. EXERCISE CAUTION WHEN EXCAVATING IN THE VICINITY OF UNDERGROUND UTILITIES. IF A UTILITY THAT WAS PROPERLY MARKED IS DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF THAT UTILITY.

5. RESTORE THE CONSTRUCTION AREA TO ORIGINAL OR BETTER THAN ORIGINAL CONDITION PRIOR TO FINAL INSPECTION.

6. EXACT LOCATION OF POLES, CONTROLLERS, ELECTRICAL SERVICES, SIGNAL HEADS, GROUND BOXES, ANTENNAS, OPTICOM DETECTORS, AND VIVDS CAMERAS SHALL BE DETERMINED IN THE FIELD AND SUBJECT TO FINAL APPROVAL BY ENGINEER IN THE FIELD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATIONS FROM THE ENGINEER, PRIOR TO CONSTRUCTION.

7. ALL CONDUITS UNDER PAVED SHOULDERS OR NATURAL GROUND SHALL BE TRENCHED AND BURIED A MINIMUM OF 18 INCHES, AS PER TXDOT STANDARD EDI(8)-14, EXCEPT WHERE NOTED OTHERWISE IN PLANS. THE CONTRACTOR SHALL BACKFILL, COMPACT, AND RESTORE THE TRENCHED AREA TO ORIGINAL CONDITIONS AND MATCH EXISTING SURFACE CONDITIONS TO THE DENSITY OF ADJACENT AREA.

8. ALL CONDUIT UNDER ROADWAYS SHALL BE BORED, UNLESS SPECIFICALLY NOTED OTHERWISE. ENCASE ALL BORED CONDUITS WITH MINIMUM 2" THICK PRESSURE GROUTED FLOWABLE FILL CEMENT. CONSIDER SUBSIDIARY TO ITEM 618.

9.

CITY ENGINEER.

ALL POLES SHALL BE GROUNDED. ALL ELECTRICAL GROUND BOXES AND GROUND BOX COVERS SHALL BE CONSTRUCTED OF REINFORCED POLYMER CONCRETE.

11. ALL SIGNAL HEADS SHALL HAVE BACKPLATES AND 12-INCH LED INDICATORS.

12. SIGNAL HEADS SHALL NOT BE PLACED OVER THE ROADWAY UNTIL ALL NECESSARY MATERIALS ARE AT HAND AS APPROVED BY THE ENGINEER IN THE FIELD.

13. ALL PROPOSED LUMINAIRES SHALL BE LED. LUMINAIRES SHALL BE INSTALLED TOWARDS THE ADJACENT STOP BAR UNLESS SPECIFIED OTHERWISE.

14. NEW SIEMENS M60 NEMA LINUX SEPAC/NTCIP TS-2 TY 2 CONTROLLERS WITH ETHERNET AND DATA KEY SHALL BE PLACED AS SHOWN IN THE PROPOSED LAYOUTS IN A SIZE P, 16-POSITION, BASE MOUNT CABINET. THE CONTRACTOR SHALL PROVIDE THE LATEST FIRMWARE BEING USED BY THE CITY OF ROUND ROCK (3.57).

15. ALL MMU SHALL SUPPORT THE FLASHING YELLOW ARROW OPERATION. EDI MMU2 16IP.

16. ONE (1) GLOBAL TRAFFIC TECHNOLOGIES (GTT) MODEL 760 CARD RACK SHALL BE INSTALLED IN EACH CONTROLLER CABINET AS SHOWN IN THE PLANS. ONE (1) GTT MODEL 764 OPTICOM PHASE SELECTOR SHALL BE INSTALLED IN EACH CONTROLLER CABINET AS SHOWN IN PLANS. GTT MODEL 722 OPTICOM DETECTORS SHALL BE INSTALLED AS SHOWN IN THE PLANS. GTT MODEL 138 DETECTOR CABLE OR EQUIVALENT SHALL BE USED FOR CONNECTION OF ALL EMERGENCY PREEMPTION EQUIPMENT. ALL EMERGENCY PREEMPTION EQUIPMENT SHALL BE COMPATIBLE WITH EXISTING CITY OF ROUND ROCK EMERGENCY PREEMPTION TRANSMITTERS.

17. ALL CONDUITS SHALL BE SCHEDULE 80.

18. PAVEMENT MARKINGS SHALL BE INSTALLED AS PER TXDOT STANDARD SHEETS PM(1)-12 AND PM(3)-12.

19. CONTRACTOR SHALL HAVE QUALIFIED PERSONNEL TO ENSURE CORRECT WIRING AND PROGRAMMING IN THE CABINET TO ALL SIGNAL PHASES & OVERLAPS.

20. ALL PEDESTRIAN SIGNAL UNITS SHALL BE POLARA NAVIGATOR ACCESSIBLE PEDESTRIAN SIGNAL (APS) UNITS WITH AUDIBLE PUSH-BUTTON AND LED COUNTDOWN HEADS.

21. THE CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) TITAN INTEGRATED DUALBAND (2.4/5.8 GHZ) WIRELESS RADIO (OR APPROVED EQUIVALENT) AND CAT 5 ETHERNET CABLE AT EACH INTERSECTION AS SHOWN IN THE PLANS. RADIO MUST BE COMPATIBLE WITH EXISTING COMMUNICATIONS EQUIPMENT IN USE BY THE CITY OF ROUND ROCK.

22. THE CONTRACTOR SHALL PROVIDE COMNET ETHERNET SWITCH (MANAGED) (PART NO. CNGE 3FE7MS2) FOR EACH SIGNAL.

23. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TO FACILITATE INSTALLATION OF BATTERY BACK-UP (BBU) SYSTEMS PRIOR TO SIGNAL TURN-ON. THE CITY OF ROUND ROCK SHALL FURNISH THE EQUIPMENT AND THE INSTALLATION SERVICE OF THE BBU.

24. THE CONTRACTOR SHALL FURNISH AND INSTALL AN ITERIS EDGE CONNECT CARD IN EACH SIGNAL CONTROLLER CABINET FOR VIVDS.

25. THE CONTRACTOR SHALL PROVIDE AXIS NETWORK CAMERA P5635-EPTZ W/POLE MOUNT BRACKET AND INSTALL FOR EACH SIGNAL.

26. THE CONTRACTOR SHALL PROVIDE AND INSTALL CAT 6 OUTDOOR CABLE FOR AXIS NETWORK CAMERA.

27. THE CONTRACTOR SHALL PROVIDE CITY OF ROUND ROCK SIGNAL DEPARTMENT WITH TWO (2) WEEKS NOTICE PRIOR TO CONSTRUCTION.

28. THE CITY WILL PROVIDE R10-17VAR SIGNS FOR INSTALLATION ON MAST ARMS. COORDINATE WITH CITY OF ROUND ROCK SIGNAL DEPARTMENT AT (512) 218-3237 FOR DELIVERY.

TRENCH SAFETY NOTES

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED, SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT WILL BE PROVIDED BY THE CONTRACTOR.

2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN PERSONS ARE IN TRENCHES 4 FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.

3. IF TRENCH SAFETY SYSTEM DETAILS WERE NOT PROVIDED IN THE PLANS BECAUSE TRENCHES WERE ANTICIPATED TO BE LESS THEN 5 FEET IN DEPTH AND DURING CONSTRUCTION IT IS FOUND THAT TRENCHES ARE IN FACT 5 FEET OR MORE IN DEPTH OR TRENCHES LESS THAN 5 FEET IN DEPTH ARE IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED, ALL CONSTRUCTION SHALL CEASE. THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF ROUND ROCK.

PAVEMENT MARKING NOTES:

1. ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.

2. ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES, AND THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITIONS.

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P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TRAFFIC SIGNAL GENERAL NOTES

SHEET XX OF XX

		SHEET NO.
PROJECT NO:	XXX	XXX
DESIGNED:	XXX	
DRAWN:	XXX	
CHECKED:	XXX	

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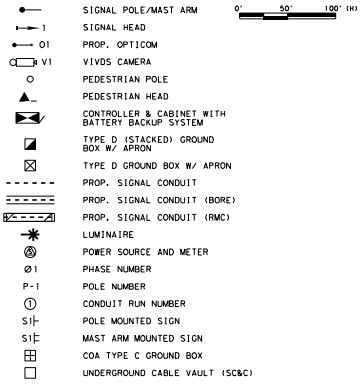
LEGEND (SAMPLE)



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P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TRAFFIC SIGNAL PLAN

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H) SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO.
XXX

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5/15/2018 11:54:16 AM

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1. CORR MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4).

2.

☐ No Action Required ☐ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.
5. DB contractor shall submit Primary NOI to CTRMA for review 48 hours before submitting to TCEQ.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☐ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1. STREAM A (ML STA XXX+XX)
2. STREAM B (ML STA XXX+XX)
3. CREEK C TRIBUTARY (ML STA XXX+XX)
4. CREEK D TRIBUTARY (ML STA XXX+XX)
5. CREEK E TRIBUTARY (ML STA XXX+XX)

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

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Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting #	☐ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ Sediment Basins	☐ Grassy Swales

AS REQUIRED BY THE ECM TO ADDRESS FIELD CONDITIONS.

The Demolition Plan meets the requirements of the Corps of Engineers' Section 404 Permit. No debris will be allowed to fall within the limits of the ordinary high water marks (OHWM) of TRIBUTARY A and TRIBUTARY B and the XXXX Creek. sawcut the old bridge columns to a minimum of 2 feet or more below the finished ground line, unless otherwise directed.

III. CULTURAL RESOURCES

Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the City of Round Rock immediately.

☐ No Action Required ☐ Required Action

Action No.

1.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☐ No Action Required ☐ Required Action

Action No.

1. DURING CONSTRUCTION, EFFORTS SHALL BE TAKEN BY THE CONTRACTOR TO AVOID AND MINIMIZE DISTURBANCE OF VEGETATION AND SOILS. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RE-VEGETATED ACCORDING TO PROJECT SPECIFICATIONS, AS SOON AS IT BECOMES PRACTICABLE.
2. DURING CONSTRUCTION, EFFORTS SHALL BE TAKEN BY THE CONTRACTOR TO AVOID AND MINIMIZE DISTURBANCE OF ALL TREES DESIGNATED FOR PRESERVATION IN THE PLANS.
3. CONTRACTOR SHALL PROTECT PRESERVATION AREAS.
4. CONTRACTOR SHALL PROTECT PRESERVED TREES USING PROTECTIVE FENCING (PLASTIC) OR CORD FENCING (WIRE) IN ACCORDANCE WITH TXDOT ITEM 506 "TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS." PROTECTIVE FENCING MAY ALSO BE CONSTRUCTED OF 4x4 POSTS AND 2x4 STRINGERS TOP AND BOTTOM.

   TRUNK ARMORING SHOULD CONSIST OF 2x4 WOOD BOARDS STRAPPED VERTICALLY TO THE TREE NO MORE THAN 2 INCHES APART AND TO A HEIGHT OF 5 FEET ENCIRCLING THE TRUNK.
5. PROTECTIVE SIGNAGE SHOULD BE COMPOSED OF COREX OR COROPLAST AND WEATHERPROOFED WITH A DIMENSION OF 18x24 INCHES. THE SIGN SHALL BE YELLOW WITH BLACK GRAPHICS WHICH STATE: "NATIVE VEGETATION PROTECTION AREA. DO NOT DISTURB"; INCLUDE MOBILITY AUTHORITY LOGO ON THE SIGN. SIGN SHALL BE SECURELY ANCHORED TO THE PROTECTIVE FENCING OR MOUNTED TO A POST. A MINIMUM OF ONE SIGN PER PRESERVED TREE SHALL BE INSTALLED AND AT A RATE OF ONE SIGN PER 500 FEET OF DESIGNATED PRESERVATION AREA.
6. DISTURBED AREAS SHALL BE RESEEDED OR RESTABILIZED WITHIN 14 DAYS. SEE PROJECT GENERAL NOTES FOR SEEDING REQUIREMENT AND SEED MIX.
7. SEE SW3P PLAN FOR LOCATIONS AND DETAILS OF THE RIPARIAN RESTORATION AREAS IF DAMAGED DURING CONSTRUCTION.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

☐ No Action Required ☐ Required Action

Action No.

1. IN THE EVENT THAT MIGRATORY BIRDS ARE ENCOUNTERED ON-SITE DURING CONSTRUCTION, EVERY EFFORT SHALL BE MADE TO AVOID THE TAKE OF PROTECTED BIRDS, ACTIVE NESTS, EGGS, AND/OR YOUNG. THE CONTRACTOR SHALL REMOVE ALL OLD MIGRATORY BIRD NESTS FROM ANY STRUCTURE WHERE WORK WILL BE DONE. IN ADDITION, THE CONTRACTOR SHALL BE PREPARED TO PREVENT MIGRATORY BIRDS FROM BUILDING NESTS DURING CONSTRUCTION.

If threatened or endangered species are observed, cease work in the immediate area, do not disturb species or habitat and contact the ECI immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact a qualified geologist and biologist.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
ECI:	Environmental Compliance Inspector	PSL:	Project Specific Location
FHWA:	Federal Highway Administration	TCEQ:	Texas Commission on Environmental Quality
MOA:	Memorandum of Agreement	TPDES:	Texas Pollutant Discharge Elimination System
MOU:	Memorandum of Understanding	TPWD:	Texas Parks and Wildlife Department
MS4:	Municipal Separate Stormwater Sewer System	TxDOT:	Texas Department of Transportation
MBTA:	Migratory Bird Treaty Act	T&E:	Threatened and Endangered Species
NOT:	Notice of Termination	USACE:	U.S. Army Corps of Engineers
NWP:	Nationwide Permit	USFWS:	U.S. Fish and Wildlife Service
NOI:	Notice of Intent		

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

STORMWATER POLLUTION PREVENTION PLANS (SWPPP)

SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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MATCH LINE (ML) STA XX+XX

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

MATCH LINE (ML) STA XX+XX

0' 50' 100' (H)

LEGEND (SAMPLE)

- TOPSOIL AND SEEDING
- EROSION CONTROL MATTING
- (TP) TREE PROTECTION
- (SF) SILT FENCE
- (RB) ROCK BERM
- (IP) INLET PROTECTION
- EXISTING TREE PROTECTED
- EXISTING TREE TO BE REMOVED
- LIMITS OF CONSTRUCTION -DISTURBANCE
- LIMITS OF CONSTRUCTION -NO DISTURBANCE
- EXISTING CONTOUR
- PROPOSED CONTOUR

NOTES (SAMPLE)

1. THIS PROJECT IS ENTIRELY OVER THE EDWARDS AQUIFER CONTRIBUTING ZONE. ALL TCEQ REQUIREMENTS MUST BE STRICTLY ADHERED TO DURING CONSTRUCTION. SEE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CONTRIBUTING ZONE PLAN GENERAL CONSTRUCTION NOTES.
2. A COPY OF THE CONTRIBUTING ZONE PLAN (CZP), THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL, AND THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE KEPT ON SITE AT ALL TIMES.
3. ALL DISTURBED AREAS WITHIN LOC ARE TO BE STABILIZED AS SOON AS CONSTRUCTION ACTIVITIES HAVE CEASED.
4. ALL DISTURBED AREAS WITH A SLOPE EXCEEDING 3:1 ARE TO BE STABILIZED USING EROSION CONTROL MATTING.
5. PERIMETER SILT FENCE TO BE USED AS NECESSARY, DOWNSTREAM OF PROJECT ACTIVITY. CONTRACTOR SHALL RELOCATE SILT FENCE TO ACCOMODATE PROJECT PHASING. SEDIMENT CONTROL ROLLS MAY BE USED IN LIEU OF SILT FENCE WITH CITY APPROVAL (SEE RG-348 ADDENDUM SHEET).
6. SEE POND X LAYOUT EROSION AND SEDIMENTATION CONTROL PLAN FOR POND REVEGETATION AND DISTURBED AREA.
7. REVEGETATION INSIDE POND SHALL BE SOD. ALL OTHER REVEGETATION SHALL BE SEEDING.

TREE LIST

TAG NO.	DIAMETER	DESCRIPTION	CODE

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

EROSION AND SEDIMENTATION CONTROL PLAN

STA XXX+XX.XX TO STA XXX+XX.XX

SCALE: 1"=100' (H) SHEET XX OF XX

PROJECT NO:	XXX
DESIGNED:	XXX
DRAWN:	XXX
CHECKED:	XXX

SHEET NO. XXX

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MOFFNEW

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

XX+XX.XX

XX+XX.XX

0' 5' 10' (H)
0' 2.5' 5' 10' (V)

NOTES (SAMPLE)

1. CROSS-SECTIONS ARE FOR CONTRACTOR INFORMATION ONLY. REFER TO INTERSECTION DETAIL SHEETS, PLAN & PROFILE, DRIVEWAY, MEDIAN AND SIDEWALK DETAIL SHEETS FOR GEOMETRIC DATA.
2. ALL EXISTING UTILITIES SHOWN IN CROSS SECTIONS ARE QUALITY LEVEL "D" OR "C", DEPTHS ARE ESTIMATED AND NOTED FOR INFORMATION PURPOSES ONLY.
3. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

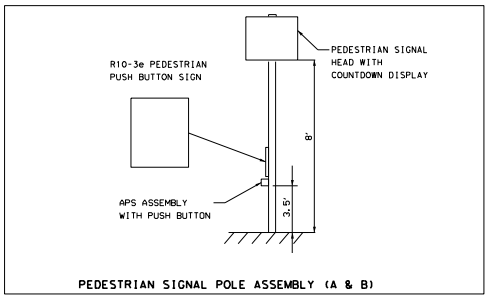
CROSS SECTIONS

SHEET XX OF XX

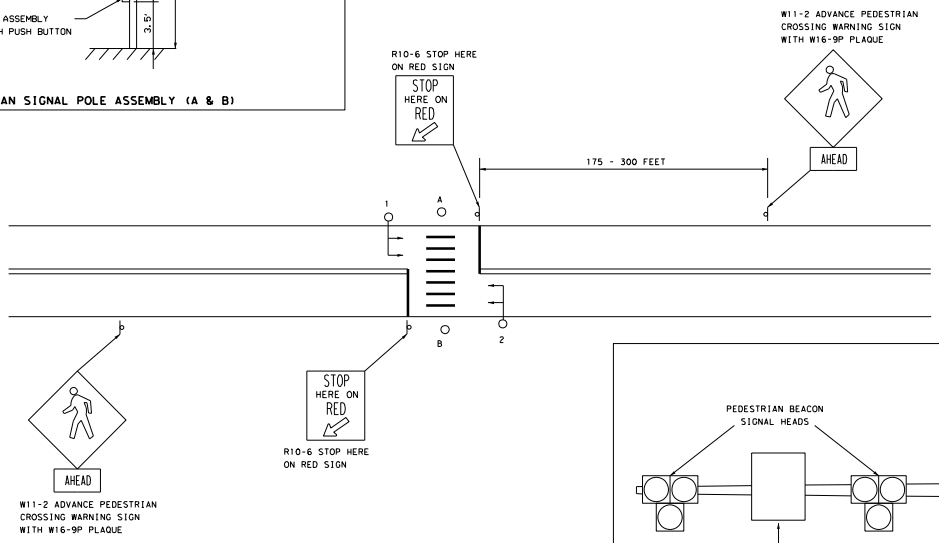
PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

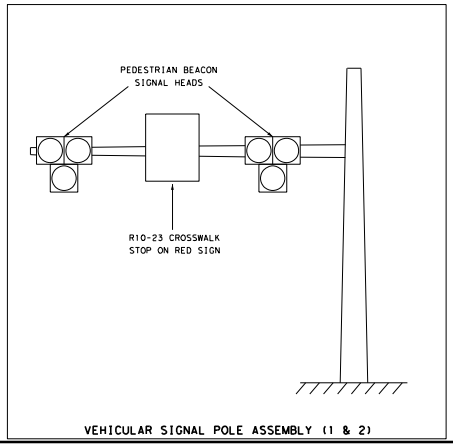
TYPICAL TRAFFIC CONTROLS FOR PEDESTRIAN HYBRID BEACON INSTALLATION

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.



PEDESTRIAN SIGNAL POLE ASSEMBLY (A & B)





VEHICULAR SIGNAL POLE ASSEMBLY (1 & 2)

NOTES:

1. STOP LINES TO BE A MINIMUM OF 40' FROM THE SIGNAL HEADS FOR THAT DIRECTION OF TRAVEL.
2. THE SPECIFIC LOCATION AND SPACING OF THE ROADSIDE SIGNS WILL BE DETERMINED BASED ON THE PRESENCE OF ANY DRIVEWAYS, INTERSECTIONS, OR OTHER EXISTING FEATURES.
3. ALTHOUGH SHOWN WITH A SINGLE LANE IN EACH DIRECTION, THIS SIGN AND SIGNAL COMBINATION MAY BE USED FOR MULTI-LANE AND/OR DIVIDED ROADWAYS.
4. ONLY ONE PEDESTRIAN PUSH BUTTON SIGN IS SHOWN ON THE PEDESTRIAN SIGNAL POLE ASSEMBLY. PEDESTRIAN PUSH BUTTON SIGNS MAY BE INSTALLED ON BOTH SIDE OF THE POLE IF DESIRED.
5. THE TIMING OF THE SIGNAL INTERVALS IS TO BE DETERMINED FOR EACH SPECIFIC SITE. HOWEVER, THE FLASHING YELLOW INTERVAL WILL BE FROM 5 TO 15 SECONDS AND THE STEADY YELLOW INTERVAL WILL BE FROM 3 TO 6 SECONDS.
6. THIS SKETCH IS DIAGRAMMATIC ONLY. IT IS NOT INTENDED TO BE TO SCALE OR PROPORTIONAL.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

PEDESTRIAN BEACON ASSEMBLY

SCALE: NTS	SHEET XX OF XX
PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER

THE FOLLOWING/LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30 TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION.

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.

3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.

6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.

9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;

    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR

    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TCEQ CONTRIBUTING ZONE PLAN

SHEET XX OF XX

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER POLLUTION ABATEMENT PLAN
GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES - LEGAL DISCLAIMER

THE FOLLOWING/LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30 TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION.

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THESE PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVED LETTER.

3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIES OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AN APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER.

4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION WELL, OR SENSITIVE FEATURE.

5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURER'S SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS SENSITIVE FEATURES, ETC.

7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE SITE.

10. IF PORTIONS OF THE SITE HAVE A TEMPORARY OR PERMANENT CEASES IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
    - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
    - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

    A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS DAMS BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;

    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;

    C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

AUSTIN REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A
AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION AND AUTOCAD FILES AND THE TRANSPORTATION CRITERIA MANUAL, INCLUDING PLAN PREPARATION REQUIREMENTS, ARE AVAILABLE ON THE CITY OF ROUND ROCK, TEXAS WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS

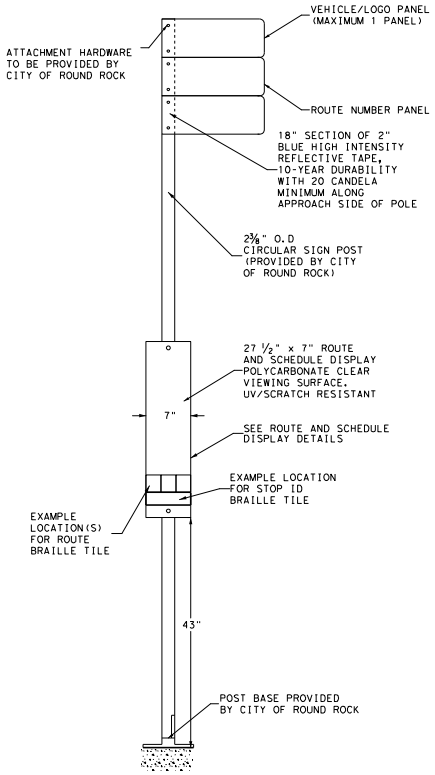
THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

TCEQ WATER POLLUTION ABATEMENT PLAN

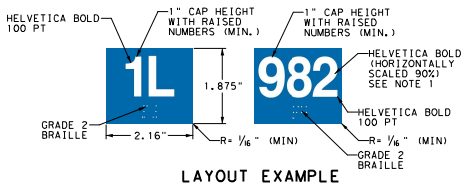
PROJECT NO: XXX	SHEET NO. XXX
DESIGNED: XXX	
DRAWN: XXX	
CHECKED: XXX	

TYPICAL POST LAYOUT FOR SIGN PANELS & ROUTE/SCHEDULE DISPLAY

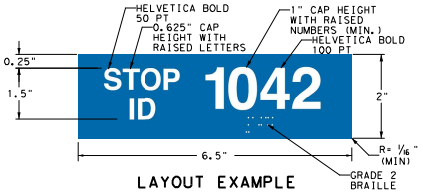


GENERAL NOTES:

1. THE PRODUCTS SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. BIDDERS SHOULD USE DIMENSIONS/FEATURES FOR GENERAL GUIDANCE ONLY UNLESS IT IS OTHERWISE NOTED THAT A PARTICULAR DIMENSION OR FEATURE IS REQUIRED FOR ALL BIDDERS' PRODUCTS.



LAYOUT EXAMPLE
ROUTE BRAILLE TILE

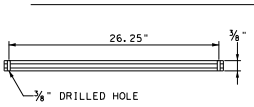


LAYOUT EXAMPLE
STOP ID BRAILLE TILE

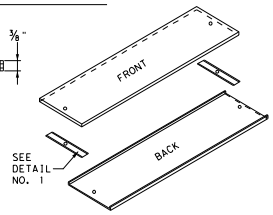
BRAILLE TILE NOTES:

1. FOR ROUTES WITH THREE DIGITS, PLEASE USE A CONDENSED/COMPRESSED VERSION OF HELVETICA BOLD OR HORIZONTALLY SCALE 90%.
2. ALL BRAILLE TILES SHALL BE COLOR WHITE ON RMS 2945.
3. ALL BRAILLE TILES SHALL HAVE ROUNDED CORNERS WITH A MINIMUM RADIUS = 1/16"
4. ROUTE BRAILLE TILE AND STOP ID BRAILLE TILE SHALL HAVE ADHESIVE BACKED MOUNTING (3M INDUSTRIAL STRENGTH ULTRA HIGH-TACK OR EQUIVALENT).
5. TILES TO HAVE EXTERIOR BLUE POLYESTER POWDER COATING. RAISED COPY TO HAVE A CONTRASTING WHITE POLYESTER COATING WITH AN ADDITIONAL CLEAR COAT.

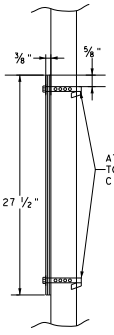
ROUTE AND SCHEDULE DISPLAY



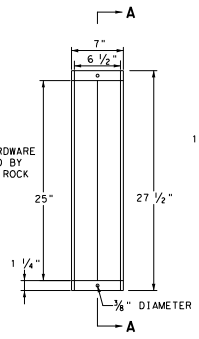
SIDE VIEW
A-A



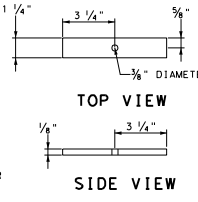
ISOMETRIC VIEW



SIDE VIEW



FRONT VIEW



TOP VIEW

SIDE VIEW

DETAIL NO. 1

ROUTE AND SCHEDULE DISPLAY NOTES:

1. PROVIDE A ⅜" NOTCH DRILLED AT THE BOTTOM OF THE HOLDER ON BOTH THE FRONT AND BACK PANELS, OFFSET SLIGHTLY FROM THE ⅜" DRILL HOLE TO MAKE IT POSSIBLE TO INSERT AND REMOVE SIGNAGE FROM THE HOLDER.
2. PROVIDE BONDING ON BOTH VERTICAL SIDES OF THE HOLDER AND THE TOP OF THE HOLDER TO CREATE A RAIN-RESISTANT SEAL.
3. PROVIDE A BEVELED OR SMOOTHED EDGE TO THE HOLDER TO PREVENT POTENTIAL CUTS OR INJURIES CAUSED FROM COMING INTO CONTACT WITH THE EDGES OF THE HOLDER.
4. SIGN MATERIAL: POLYCARBONATE A
5. BONDING PROCESS: HYZOD GP SOLVENT BONDED WITH METHYLENE CHLORIDE
6. DISPLAY CASE MUST HOLD AN INSERT (PROVIDED BY CITY OF ROUND ROCK) OF THE FOLLOWING DIMENSIONS: 6.25" X 25" DIGITAL PRINT, CAPABLE OF BEING INSERTED/REMOVED BY A 2 PERSON CREW.

P.E. SEAL REQUIRED
DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

BUS STOP SIGNAGE

POST & DISPLAY DETAILS

SHEET 1 OF 4

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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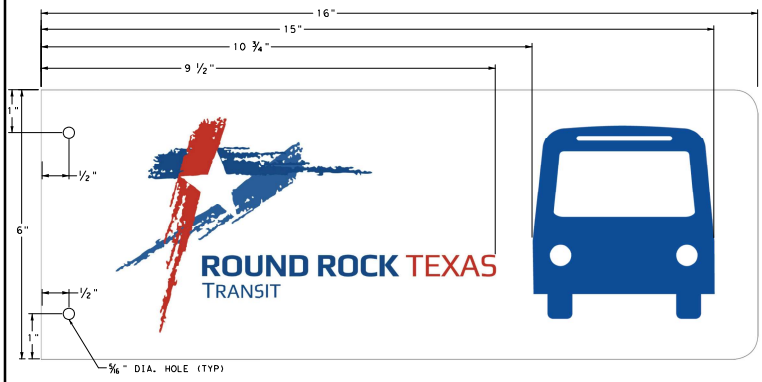
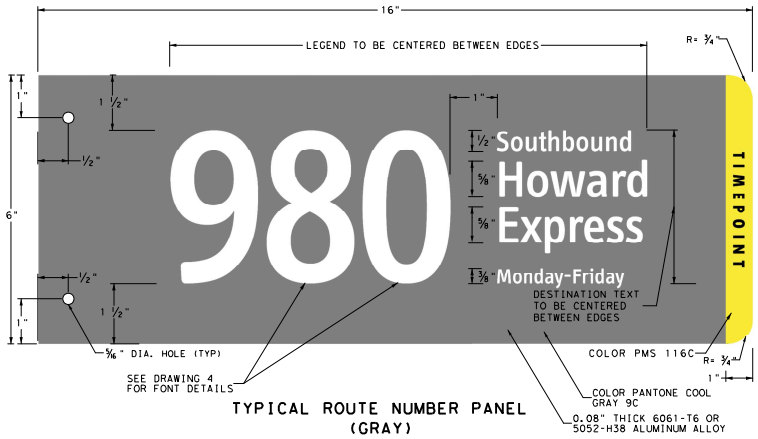


TYPICAL VEHICLE/LOGO PANEL



TYPICAL ROUTE NUMBER PANEL (GRAY)

NOTES

1. SIGN PANELS SHALL BE 3M SCOTCHLITE 700 OR 990 COLOR SERIES OR 3M SCOTCHLITE ENGINEER GRADE REFLECTIVE SHEETING OR EQUIVALENT.
2. THE PRODUCTS SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. BIDDERS SHOULD USE DIMENSIONS/FEATURES FOR GENERAL GUIDANCE ONLY UNLESS IT IS OTHERWISE NOTED THAT A PARTICULAR DIMENSION OR FEATURE IS REQUIRED FOR ALL BIDDERS' PRODUCTS.

P.E. SEAL REQUIRED

DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

BUS STOP SIGNAGE

PANEL DETAILS

SHEET 2 OF 4

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	
DRAWN: XXX	XXX
CHECKED: XXX	

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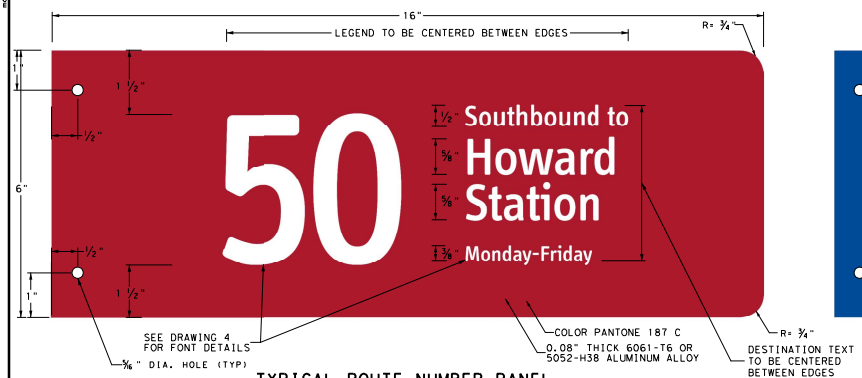
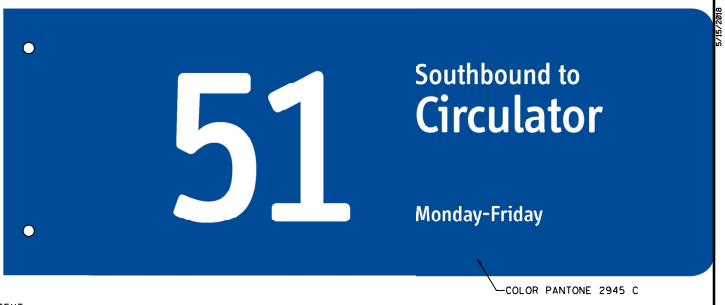
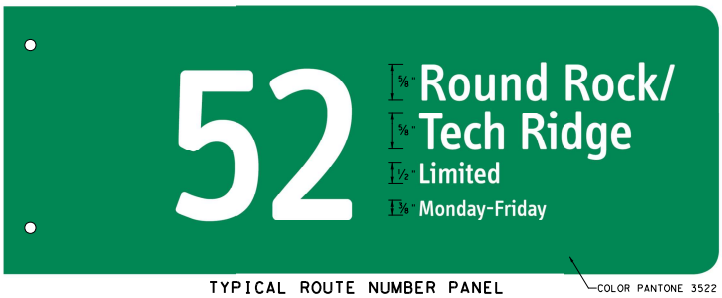


TYPICAL ROUTE NUMBER PANEL
(RED)



TYPICAL ROUTE NUMBER PANEL
(BLUE)



TYPICAL ROUTE NUMBER PANEL
(GREEN)

NOTES

1. SIGN PANELS SHALL BE 3M SCOTCHLITE 700 OR 990 COLOR SERIES OR 3M SCOTCHLITE ENGINEER GRADE REFLECTIVE SHEETING OR EQUIVALENT.
2. THE PRODUCTS SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. BIDDERS SHOULD USE DIMENSIONS/FEATURES FOR GENERAL GUIDANCE ONLY UNLESS IT IS OTHERWISE NOTED THAT A PARTICULAR DIMENSION OR FEATURE IS REQUIRED FOR ALL BIDDERS' PRODUCTS.

P.E. SEAL REQUIRED
DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

BUS STOP SIGNAGE

PANEL DETAILS

SHEET 3 OF 4

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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Info Disp Medium, Roman

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Info Disp Semi Bold-Roman

GENERAL GRAPHICS REQUIREMENTS

(FOR DRAWING 2: PANEL DETAILS)

ALL GRAPHIC COPY INCLUDING TEXT WILL BE MADE FROM 3M SCOTCHLITE ENGINEER GRADE REFLECTIVE SHEETING COLOR - PARKWAY WHITE (WITH THE EXCEPTION OF THE BLACK TIMEPOINT TEXT), OR EQUIVALENT. NO CLEAR COATING SHALL BE USED. EQUIVALENT PRODUCTS WILL BE SUBJECT TO THE REQUIREMENTS OF PART 3(f) OF THE SOLICITATION.

COLOR APPLICATIONS SHALL BE MANUFACTURED USING 3M SCOTCHLITE COLOR SERIES 700, SERIES 990 OR AN EQUIVALENT PRODUCT. EQUIVALENT PRODUCTS WILL BE SUBJECT TO THE REQUIREMENTS OF PART 3(f) OF THE SOLICITATION.

THE BASE SURFACE FOR ALL SIGNAGE PANELS SHALL BE MADE OF ALUMINUM ALLOY 6061-T6, ALUMINUM ALLOY 5052-H38 OR AN EQUIVALENT METAL. PANELS SHALL BE AT LEAST AS RIGID AS A TYPICALLY SUPPORTED 0.080 inch (2 mm) THICK PANELS OF THE ALLOYS LISTED ABOVE. SURFACES SHALL BE PREPARED ACCORDING TO THE SIGNAGE SHEETING MANUFACTURER'S RECOMMENDATIONS. EQUIVALENT PRODUCTS WILL BE SUBJECT TO THE REQUIREMENTS OF PART 3(f) OF THE SOLICITATION.

P.E. SEAL REQUIRED
DESIGNERS INFORMATION REQUIRED

REV. NO.	DATE	DESCRIPTION	BY

CLIENT LOGO

ROUND ROCK TEXAS
THE CITY OF ROUND ROCK, TEXAS
TRANSPORTATION DEPARTMENT

PROJECT NAME
PROJECT NAME

BUS STOP SIGNAGE

GRAPHIC AND LETTERING REQUIREMENTS

SHEET 4 OF 4

PROJECT NO: XXX	SHEET NO.
DESIGNED: XXX	XXX
DRAWN: XXX	
CHECKED: XXX	

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