Annual Consultant/CoSA Seminar

Partnering for Success

City of San Antonio Horizontal Projects

Design and Review

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City of San Antonio and PEPP/SACEC
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Project Process

Design Guidance Manual

http://www.sanantonio.gov/cims/designmanualforms.asp

Submittal Check List

- Construction Plans
- Design Summary Report
- Utility Coordination Report
- Utility Resolution Developed
- Utility Adjustment Schedule Developed
- Utility Certification Letters
- Cost Estimate
- Project Construction Schedule
- Written Response to All Comments (Using the Comment Resolution Form Provided)
- List of Governing Specs, Special Provisions, and Specifications
- Insert Joint Bid Utility Plans and Specifications
- Signed QA/QC Certification Form
- CD with PDF's of all Deliverables (Upload to Web Portal)
- Schedule Site Visit with SAWS and All Utilities Prior to Bid Phase
- Prepare TDLR Submittal
- Schedule Public Meeting (If Req'd)
- Schedule Review Meeting

Design Elements

- Survey
- Drainage
- Traffic
- Roadway
- Permitting
- CAD Standards
- Cost Estimates and Specifications and IFB/Contract Book

Survey

Design Survey (Topographic) and ROW/Easement

Key Issues -

Coordinate System (NAD 83(93) & NAVD 88)

Construction Staking

TxDOT Feature Codes:

City has adopted TxDOT features codes which enables data from field to come in correct level in MicroStation.

Resources -

Survey Services Contract, TSPS Guidance Manual, DGM (Section 3), Texas Board of Professional Land Surveying

www.bexarfloodfacts.org for Survey Control Points used for 2ft contours

Survey

Lessons Learned

- *Grid vs Surface (Adjustment Factor = 1.00017)*
- *Realize that some requirements in DGM are not applicable*
- *In many cases, it is worth completing the topographic survey during the PER Phase*
- *Benefits of getting survey just beyond ROW limits/ fence lines.*
- *Understand the difference between Apparent ROW and ROW*

Drainage Design

Criteria – CoSA Unified Development Code and TxDOT Hydraulic Design Manual

Key Design Issues -

Design frequencies and intensity tables for CoSA and TxDOT are different *(25 yr CoSA vs 10 yr TxDOT)*

UDC has adopted new intensity tables *(See latest UDC Amendments)*

Outfall Conditions (Exist System, Channel, Creek, etc)

Floodplain Locations

Resources -

www.bexarfloodfacts.org

Drainage Design

Lessons Learned

- *Know the mandatory detention areas.*
- *No impact to downstream owners means ZERO rise*
- *Check to make sure the adequate JB is used, CoSA requires 6" between walls of pipe and JB wall*
- *EGL and HGL are required on Stormsewer profiles.*
- *Know the permitted/ Environmental commitment limitations on impacts to Waters of the US*

Traffic

Criteria – MUTCD, Highway Capacity Manual, AASHTO

Key Design Issues -

Signalized Intersections
Wheelchair Ramps, Landing Pads, Push Buttons
Get the CoSA Traffic Group involved with the design
Type of Controllers/System
Traffic Characteristics
Added Capacity or Operational Improvement Project

Resources -

CoSA DGM
Report Outline for PER phase
Requirements for each Submittal of the design

Traffic

Lessons Learned

- *Get the CoSA Traffic Group involved early with the design*
- *Any separate coordination between Public Works Traffic and stakeholders should be shared during design.*
- *Document the coordination between designer and Traffic section*
- *Review of submittals are to be done by CoSA Traffic Engineer*

Roadway Design

Criteria – CoSA DGM, CoSA UDC, TxDOT Roadway Design Manual, AASHTO

Key Design Issues -

Update the Design Summary Report
Traffic Control Plan/Sequence of Work
ROW Issues
Driveway Penetrations
Controlled Access Facilities
2% max X-Slopes at Crosswalks
Wheelchair Ramp design with Traffic Signals/Ped Heads
TDLR Certification which require SEAL
(Can modify Interim Seal for review)
Location of Profile Grade Line (Centerline or Top of Curb)
Bicycle Facilities
Enhancements – Local Art, Illumination, etc.
Schedules – Design and Construction

Roadway Design

Lessons Learned

- *If roadway alignment requires super-elevation, set PGL at Centerline*
- *Show rate, grade types, class of material on typical sections (CoSA does not use the TxDOT general notes that cover this)*
- *Determination of Roadway Classification and associated design criteria*
- *When you have substitutive alternatives, set up sheets so that you can remove the sheets that don't apply once you go to construction.*
- *Clarify the type of binder for HMAC, refer to spec which shows minimum based on roadway classification.*
- *Make sure and include classification on coversheet as it specifies the types of materials to be used on project.*
- *CoSA Item 530.1 Barricades includes payment for WZPM and elimination of exist PM, but does not include CTB, Shoring, detours, cut & restore.*
- *If you use detours/temp pavement, include pavement thickness*

Permitting

EPIC Sheet – Environmental, Permits, Impacts & Commitments

Resources -

CoSA Environmental Management Department
Agencies:

Local Permits -

Right of Way Permit
Floodplain Permit
Tree Permit (CIP Tree Affidavit – 25% Preservation of protected trees)
Historical
Railroad
Right of Entry

Permitting

Lessons Learned

- *Plan early and know limitations*
- *Plan conservatively*
- *Jurisdicitional Determination outlines the Ordinary High Water Mark (OHWM)*
  - *NWP without Notification (Less than 0.1 Ac Impacts) – 3 month process*
  - *NWP with Notification (PCN) (0.1 – 0.5 Ac) – 6 month process*
  - *Individual Permit (IP) (Over 0.5 Ac) – 12 to 18 month process*
- *Maintain Commitments Throughout Construction*
- *Pay for tree removal under Prep ROW , but include item for removal by each for any additional trees that may need to be removed.*
- *KEY IS TALK TO THE ENVIRONMENTAL GROUP EARLY AND KEEP THEM INFORMED*

Qtys, Estimates, & Specs

Follow CoSA Specifications and TxDOT Specifications

Special Specifications and Special Provisions – Clearly define items and/or process involved with SS and SP

Utilize Most Recent City Unit Prices for CoSA and TxDOT, Contact Local Contractors

Qtys, Estimates, & Specs

Lessons Learned:

- *Separate items between TxDOT specs and CoSA specs to clarify which items go with which specification, many item numbers are duplicate numbers*
- *Tree protection payment for Typ I and II (By LF) is it the trunk circumference?*
- *Consider using the root protection zone (1' radius for each inch of trunk diameter) to measure quantity?*
- *Consider adding a SS for incidental construction (i.e. private signs, fences, sprinkler systems, landscape lights, etc within the ROW)*
- *Consider adding additional sidewalk and driveway quantities to estimate.*
- *Did not see difference in alternate bids when schedule was accelerated.*
- *If backfilling with flowable fill, DO NOT exceed 150 psi.*

Coordination

Consultant and Their Team

Utilities (Joint Bid)

Utilities (Non-Joint Bid)

CoSA Departments (Traffic, Stormwater, Real Estate, etc)

Other Owners (TxDOT, Bexar County, etc.)

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